

BUTANE-PROPANE

News

25¢

When her toolkit
is traded for a



One day — soon, we hope — America's war-working women will return once again to the peaceful pursuit of homemaking. With them they'll bring a new appreciation of efficiency, gained on high-speed production lines. When that day comes, Grand will be ready . . . ready with a gas range enjoying the functional beauty and effortless efficiency of modern production machinery. Though our plant is making munitions today, our laboratory is reaching into the future for the kind of range Mrs. America is certain to demand when she turns in her toolkit and takes up her skillet once again.

*When Peace Comes,
It Will Be GRAND*



Grand Gas Ranges

DIVISION OF THE CLEVELAND COOPERATIVE STOVE COMPANY

CLEVELAND, OHIO

NOVEMBER 1942

BUTANE-PROPANE CYLINDERS



BUILT-IN DURABILITY

assures long life

Hackney cylinders are built for long life. The Hackney process of cold drawing assures uniform sidewall thickness and further is a test of the quality of the steel itself. Hackney LPG cylinders have only a single body weld . . . X-ray controlled. Finished cylinders are heat-treated to assure continuous, trouble-free service.

These and other preference-winning features are the result of Hackney design and manufacturing facilities. At the present, on products other than those intended for war purposes, there are restrictions on metals—but there are no priorities on knowledge, skill, imagination and Hackney interest in product improvement. Their continuance is your assurance that Hackney will remain headquarters for better cylinders.

PRESSED STEEL TANK COMPANY

General Offices and Factory: 1487 South 66th Street, Milwaukee, Wisconsin

Containers for Gases, Liquids and Solids

with PITTSBURGH
Liquid BUTANE-PROPANE METERS
ON YOUR TRUCKS

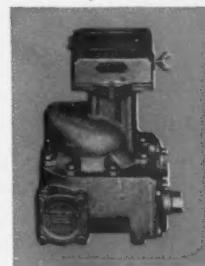


- ✓ ACCURATE MEASUREMENT
- ✓ DEPENDABLE PERFORMANCE
- ✓ SATISFIED CUSTOMERS
- ✓ PERMANENT RECORDS

THE Pittsburgh Piston Type Meter has been especially designed for the accurate measurement of tank truck deliveries of liquid butane or propane. Hundreds of LPG dealers and distributors throughout the country are relying on these meters for proper stock accounting, for establishing efficient and economical delivery systems and for strengthening customer relations.

In the sale of LPG, just as in the sale of other liquid and gaseous fuels, accurate measurement is a necessity—both to safeguard customer good will and to protect profits. Measurement of LPG by meter is the only method that protects both buyer and seller alike.

The Pittsburgh Piston Meter can be equipped with various types of registers, including the Master Meter Duplicator, the original delivery ticket printing unit, which provides customers with a certified printed receipt for every transaction.



PITTSBURGH EQUITABLE METER COMPANY

NEW YORK OAKLAND
BROOKLYN TULSA
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MEMPHIS BOSTON

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MERCO NORDSTROM VALVE COMPANY
Main Offices, Pittsburgh, Pa.
NATIONAL METER DIVISION, Brooklyn, N. Y.



EMCO Large Capacity
Pressed Steel Gas Meter



EMCO Type B
Ejector Service Regulator



ROTOCYCLE Meter for
Liquid Butane - Propane



NORDSTROM
Lubricated Plug Valve



BUTANE-PROPANE

News

Reg. U. S. Pat. Off.



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NOV



It's On

ROPER'S Practical War-Time Service Plan

Thank you for the splendid volume of gas range business enjoyed by Roper for many years. Now Roper has stopped gas range production. We must concentrate on one important job—producing implements of war.

To help win the war it is important that Roper gas ranges be kept in tip-top condition. Write today for the Roper War-Time Service Plan as a practical, workable answer.

THIS NEW SERVICE HANDBOOK COVERS ALL } PHASES OF SERVICING ROPER GAS RANGES }

The new Roper service handbook covers Roper gas range operation from A to Z. It deals with top burners, ovens, broilers, ignition, safety pilots, etc. Numerous illustrations. Use this handbook as your guide in maintaining good customer relations. Cost—50c per copy.

GEO. D. ROPER
CORPORATION

GENERAL SALES OFFICE AND PLANT: ROCKFORD, ILLINOIS

Keep 'Em
Cooking
with
GAS



ROPER GAS RANGES FOR ALL GASES INCLUDING (LP) LIQUEFIED PETROLEUM GAS

LETTERS

Gentlemen:

Kindly send us information regarding products liability insurance to cover any liability that may arise from the use of our propane gas in the customer's home or on their property.

Nelson E. Jones
Jones Appliance Service,
Hagerstown, Maryland

Gentlemen:

In your June issue, 1940, you have an article by Clarence E. Cooper, on liability insurance.

We will appreciate information as to the name of the company handling products liability insurance.

C. A. Marsh
Multnomah Fuel Co.
Portland, Oregon

In reference to liability insurance covering property where propane gas has been installed, we suggest you write to Frank Fetherston, secretary, Liquefied Petroleum Gas Association, 11 W. 42nd St., New York City. The Association is in a position to advise you accurately and definitely upon this subject.

Gentlemen:

Do you have a booklet on butane and propane gas that a layman can understand and digest without knowledge of chemistry?

I would like to have all information I can get on butane air-mix plants, especially those dealing with the Kemp inert gas system.

Everet Troxell
Lawrence, Kansas

We are sending you a descriptive folder covering our recently published 3rd Edition of the Handbook BUTANE-PROPANE Gases. This

book contains a chapter on butane air-mix plants and the Kemp inert gas system, and no doubt it will serve your needs excellently.—Ed

Gentlemen:

Enclosed you will find our check for a copy of the Handbook BUTANE-PROPANE Gases. We have the second edition and find it so helpful that we have no hesitation in ordering the latest.

The monthly articles entitled The Bottled Gas Manual are so useful we have no doubt they will be republished in book form and we are entering our order now.

We are handling a popular brand of propane and have been wondering if it would not pay us to start buying gas in bulk, using a skid tank and hand pump for filling cylinders. We have about 150 customers and increasing rapidly, with no saturation in view. We thought it might be better to start this way than to wait until an extra large investment is required. Can you tell us if similar systems have been satisfactory? Of course we realize that this could not be done under present regulations but we could do some planning.

C. F. H.
Wisconsin

The Handbook has been mailed you. It is probable that we will print The Bottled Gas Manual in book form at a later date but we are not accepting orders for it as yet. It still has another year to run in serial form in BUTANE-PROPANE News.

In regard to your plan of establishing a filling plant for your cylinders, we suggest that you postpone your decision until the end of the war inasmuch as the necessary equipment for a filling plant would be difficult, if not impossible, to obtain at this time. We would not think that a skid tank and hand pump

would be very satisfactory for this purpose. The economic value to you of installing a filling plant would have to be estimated upon the basis of the cost of such a plant as opposed to the cost of sending your cylinders away for refilling. A refilling plant works out very satisfactorily for dealers having a sufficient number of customers to justify the expense, according to reports from firms who have installed such equipment.

We will be glad to have you query us further on this matter at a later date when your actual needs are more definitely known.—Ed.

Gentlemen:

If you can, please advise us if there is any restriction against the use of NEW galvanized iron or steel pipe or brass T's, L's and fittings, etc. for installing new ranges legal under "L-79," and where old utilization equipment is used. The old utilization equipment was in use in March and pulled out after April first. We have been unable to get ruling on the matter.

A. R.

North Carolina

As far as we can determine you would be privileged to install galvanized iron, steel pipe or brass fittings with new ranges which are legal under "L-79." To make certain that you are proceeding legally in your proposed installations, we are enclosing tear sheets from other issues of *BUTANE-PROPANE News* which set out the terms of various orders affecting the LP-Gas industry. If you must apply for an exception to any of the orders so that specific installations can be made, please note the forms for such exceptions that are quoted in the articles attached.—Ed.

Gentlemen:

Will you please give us the names of the manufacturers of butane vaporizing equipment. We wish to secure a vaporizing system to be used with a 1000-gal. butane system where the load is too large for the system.

T. L. F.

California

Among the advertisers in *BUTANE-PROPANE News* will be found a number of firms which manufacture vaporizing equipment.—Ed.

Gentlemen:

Will you inform us whether or not the "Bottled Gas Manual," by C. C. Turner, is to be published in book form? We have been using the articles in *BUTANE-PROPANE News*. If it is to be published, please quote us the date, publisher and price.

We also have the 3rd edition of your Handbook.

L. A. Eales.

Bridgeport Public Library,
Bridgeport, Connecticut.

The "Bottled Gas Manual" will be published in book form according to our present plans. The exact date has not been determined inasmuch as the series still has about one year to run in our magazine. Announcements regarding its publication will be made in *BUTANE-PROPANE News* sufficiently far ahead so that you will be able to order it at that time.—Ed.

Gentlemen:

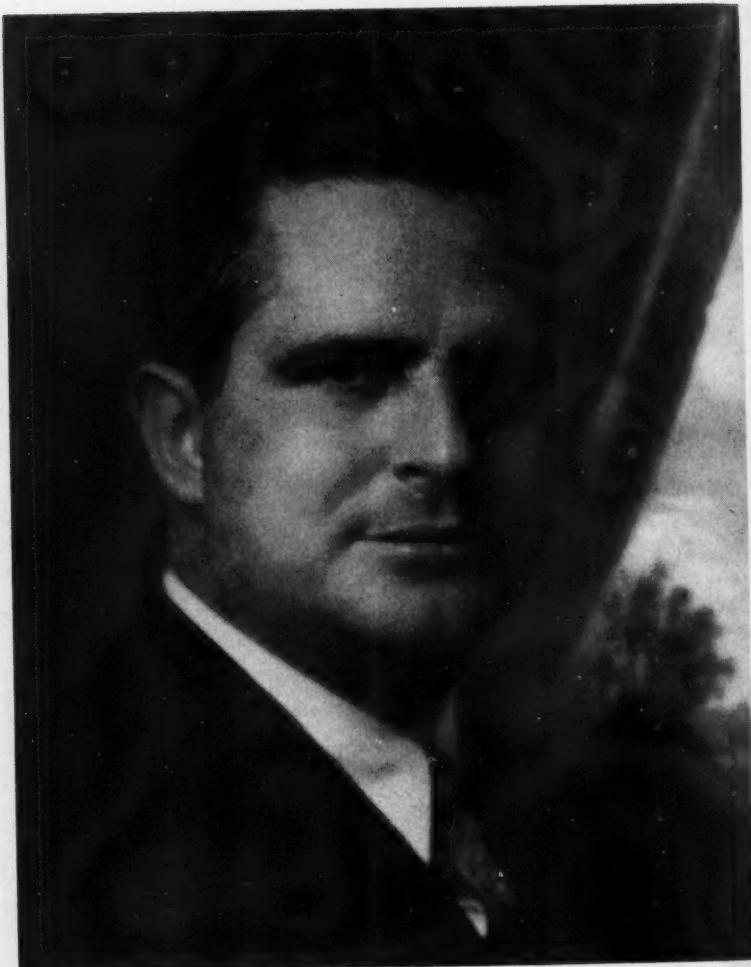
Please send by mail list of butane service stations on highway from California to New York. Also list of stations on Atlantic Seaboard.

Best Butane Service, Inc.
Oakland, California

We get many inquiries similar to yours but regret to say that there is no known list of butane service stations between California and New York. A year ago last December we published a National Directory of butane fueling stations but neither at that time nor now were there more than a few in the Middle West and along the Atlantic seaboard. Apparently there is very little automotive application of butane in the Eastern states.

It just happens that within the last week two men have telephoned our office upon returning from automobile trips from California to New York in cars equipped with butane carburetion. Neither of these men had any difficulty in obtaining fuel whenever needed, but after crossing the Mississippi River they nearly always had to obtain fuel from domestic dealers as they seldom found dispensing stations equipped to serve them.—Ed.

• **BUTANE-PROPANE News** welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed.—Editor.



H. E. FELT
Guest Editor for November

RED FLANNELS?

By H. E. FELT

Vice President, Warren Petroleum Corporation, Tulsa, Oklahoma

Customer: *Will you be able to keep my family warm this winter?*

LP-Gas Dealer: *We will keep you warm even if we have to furnish Red Flannels.*

ANOTHER evidence of the willingness of a gang of men (and now—at least for the Duration—women, bless them) to carry on as patriotic business men under war conditions vitally effecting their industry. It may be true that it took a serious all-out war and threatened shortage to teach a lesson on profit in each gallon of butane, but what of it?—the lesson was learned, and quickly.

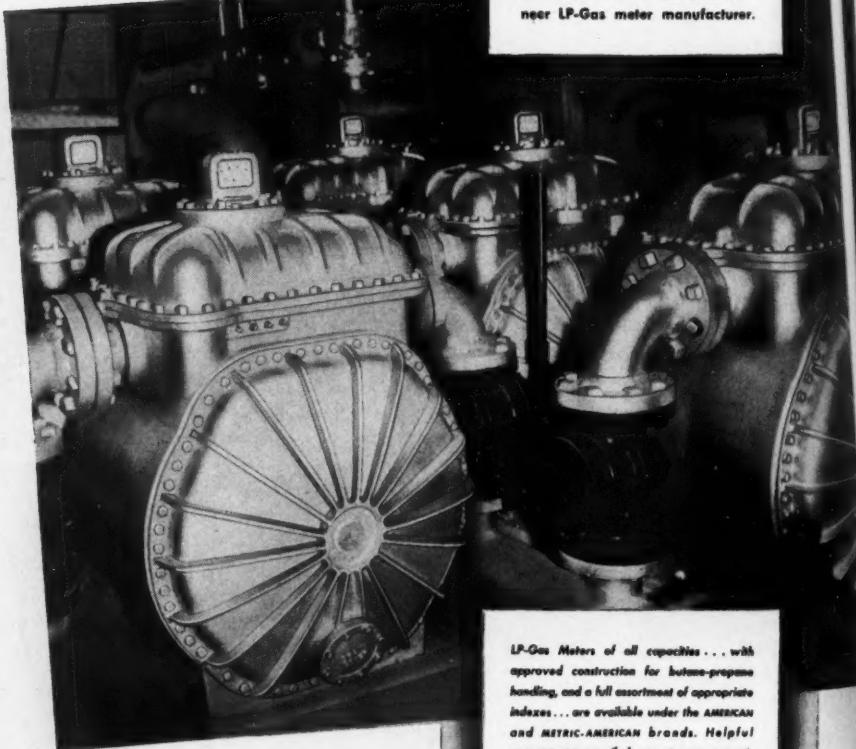
Don't think for a moment that these manufacturers of the prime substitute for Red Flannels are not appreciative of the stabilities their dealers have created—nor have they shirked for a moment their responsibilities to provide the necessary ingredients of high octane gasoline and rubber. And with their own money—not yours through Government channels!

Unless Old Man Winter takes an abnormal sock at us this year, manufacturers will produce enough normal butane and propane to relegate the Red Flannels to the back shelf. The isobutane, of course, is being delivered to Hitler and Hirohito.

We still have, however, our problem of transportation. O.D.T. limitations on minimum mileage hauls for tank cars have put a burden on trucks and we have yet to see how far truck transportation will stretch. We are still optimistic that the transporters can meet this crisis in such a way that we can all say:

N O R E D F L A N N E L S T H I S W I N T E R !

A Battery Goes into Action at Camp Haan



In the propane plant at Camp Haan, in California, this battery of METRIC-AMERICAN Ironcase 500-B's is helping Uncle Sam keep both gas supply and accounts straight. • Each of these five busy meters (LP-Gas type) is handling better than its conservatively rated 10,540 cu. ft. per hr. capacity of propane, measured at 15 lbs. gage. The plant's propane delivery thus is measured accurately and continuously... by equipment that bears the name of the pioneer LP-Gas meter manufacturer.

AMERICAN
METER COMPANY
INCORPORATED, 1882

GENERAL OFFICES • 60 EAST 42ND STREET, NEW YORK

LP-Gas Meters of all capacities... with approved construction for butane-propane handling, and a full assortment of appropriate indexes... are available under the AMERICAN and METRIC-AMERICAN brands. Helpful CATALOG LPG-4 mailed you at your request.

1748

BUTANE-PROPANE News

MAINLY BEYOND THE MAINS

A Living Memorial

In these days of mobilization for national defense and victory, the sound of marching feet throughout the land has risen to a crescendo. More and more often long-familiar faces are suddenly disappearing from their accustomed places at desks and work benches in the LP-Gas industry. Hardly an office or shop remains in which there are not one or more gaps in the ranks of those with whom we have worked.

All of these men have gone in answer to an official call. But to their credit, let it be recorded now that, despite the disruption it has meant in their lives, despite the discomforts and the physical labor it involves, practically all of them have answered that call cheerfully and willingly.

In their going they have placed upon those of us who remain behind a very real and indisputable obligation — the obligation to match their personal

sacrifices with an equal personal effort to do the needed work at home with the same cheerful willingness.

Such an effort today will be a more tangible memorial to these men and their works than all the scrolls and tablets that may ever be presented to them in the future.

The Month

With the resignation last month of Walter Timmis, Chief of WPB's Plumbing and Heating Branch, activities in the LP-Gas Section of this branch have about marked time pending the announcement of the appointment of the new Chief, Joseph F. Wilbur, a consulting engineer from Boston, Mass. Since, at this writing, the new appointee has not yet taken over the duties of his office, any questions of new or changed policy with respect to the LP-Gas Section must remain for the moment un-

answered. It is generally believed, however, that the staff working under John F. Steel, the present Chief of the section, will be retained and that the affairs of the industry will be under his understanding and competent direction.

A bigger question looming on the horizon, however, is the propriety and the reasonableness of holding the LP-Gas industry down to its secondary status as a section of the Plumbing and Heating Branch. In its larger aspect the whole mechanism of producing, distributing and dispensing butane and propane is not a plumbing and heating matter, any more than is the production and distribution of natural gas. LP-Gas is a fuel, and as such its most effective use can only be accomplished when it is considered in relation to all of the other fuels that are available, and nothing that affects the availability and supply of oil, coal or natural gas can be without its repercussions on this industry.

Whether a new and separate Liquefied Petroleum Branch will be created in WPB, or the industry will be taken lock, stock and barrel into OPC, remains to be seen. Certainly as the situation in respect to all fuels becomes more critical, some such action is indicated if not, indeed, inevitable.

WPB officials again repeat the admonition to the industry to keep all storage filled to capacity as a hedge against possible temporary fuel shortages during the winter months. Some bulk station operators who have allowed tank cars to stand on the siding for several days, paying the demurrage charges for the extra storage thus afforded have been advised by the ODT that such cars must be unloaded and on their way within 24 hours.

* * *

OPA has been receiving inquiries from dealers who have found themselves caught under a low price ceiling when fuel prices were frozen. The disposition at OPA is to keep prices down, and no great sympathy is felt there for LP-Gas dealers who were caught in the net of their own uneconomic practices. However, where current ceiling prices are such that to operate under them may seriously threaten the continued supply of gas to the consumer, adjustments will have to be made, and a method is provided for petitioning for such consideration.

The procedure to be followed in such case is as follows: Any dealer who feels that he is operating under fuel ceiling price which threaten financial distress that may result in impairment of service to his customers should address a letter to the

secretary of the OPA, petitioning for amendment or adjustment under Revised Price Schedule No. 88. Such a petition must be presented in quintuplicate—that is, five copies must be forwarded to Washington—and it must give all of the facts and figures on operating costs, a profit and loss statement where possible and a comparison of the profits, if any, for the first half of 1942 with those for the same periods in 1941 and 1940. The whole must be sworn to before a notary public.

There is no need for dressing up the petition in legal verbiage, and no set form has been outlined that its text must follow. It is essential to bear in mind, however, that the only chance of a favorable action on such a request will rest on how completely and how convincingly the case is put, and all of the facts should be in the first letter. Official Washington is no longer concerning itself with the mortalities in small business unless such mortalities have a much broader implication than the welfare of the small business man and his own individual enterprise. In other words, whether or not a butane dealer in Texas continues to make his living selling butane makes little difference, but if several hundred families are to be deprived of their fuel supply through his failure to function,

the right of those families to have fuel so long as fuel is available is of primary importance.

Regional offices of the OPA have no authority to allow or to deny rate adjustments, but they may be of assistance to dealers in advising them of the latest interpretations emanating from Washington, and the advice from OPA headquarters is that wherever possible the regional offices should be consulted before filing petitions. This presumably is on the off-chance that they might be able to render some helpful advice. Regional offices are located in Atlanta, Boston, Dallas, Chicago, Cleveland, Denver, Los Angeles and New York City.

* * *

November 15th is the deadline for the registration of all commercial motor vehicles as required by order ODT No. 21. All owners of commercial vehicles, which includes all types of trucks, trailers and semi-trailers, should have received by now the necessary forms to be filled in making the required applications for Certificates of War Necessity. Truck owners who may not have received such forms are not in any way released from the requirements of the order, and must make application for them to ODT Field Office for their territory.

How One Firm Operates Under Wartime Restrictions

By R. G. HARDIE

Secretary, Imperial Gas Co., Los Angeles

DON'T be discouraged if your first PD-397 application is turned down. Our own batting average has been 81% accepted, 19% rejected. Our recommendation in considering or making out applications would be:

1. Tell your customer frankly if you do not think the War Production Board will grant his application. We have told many prospects that we did not want them as customers until the war was over. There is a place for every piece of LP-Gas equipment and our job is to see that it goes where it can do the most good. Our first duty is to the Services and to essential civilian workers who are absolutely dependent upon our fuel.

2. We do not know how the members of Liquid Gas Section of the War Production Board determine who will and who will not receive permission to install LP-Gas equipment. We can well imagine the tremendous task which faces them when they are called upon to con-



R. G. HARDIE

sider thousands and thousands of applications for equipment. It has been our own experience that they are very fair. In our opinion they will reject an application if, among other things, the consumer has other fuel at his disposal, or if the consumer has no gas appliances. After all it would not be logical for the Board to grant an outfit to some person who didn't have the appliances to go with it, while at the same time perhaps denying another person with appliances already in his possession.

We cite two instances of rejections, one, we believe, because the consumer had no appliances; the other because he had another means, even if unsatisfactory, of cooking:

1. Mr. "A" is building a trailer for his own use in a defense area. *He has no cooking equipment.* He is building the trailer because the area in which he will be employed has almost no vacant houses, and if they did exist the rents would be prohibitive.

2. Mr. "B" *has a gasoline stove* which has caused two fires. He and his wife are afraid of it and wish to change to gas.

On the other hand exceptions are granted as the following examples would indicate:

1. Mr. and Mrs. "A" are moving to a home where natural gas is not available. They have a gas stove and space heater which they are taking with them.

2. An F.H.A. housing project in a defense housing area where LP-Gas has been specified.

3. Company "A" is engaged in essential war work. Priority of AA-1. Gas used for preheating.

4. Company "B", sub-contractor for the navy. Gas used in connection with application of a protective coating for propeller shafts for Navy sub-chasers and mine sweepers.

5. Installation of propane for cooking on a U. S. army transport.

It should be noted here that the Board has the final authority in

granting or denying applications, and the illustrations above are cited to show that the Board is not unreasonable.

When the Limitation Order (L-86) became effective April 8, 1942, our company accelerated work which it had already begun in locating inactive units among the approximately 6500 leased sets which we serve. We undertook a physical survey of every company-owned installation. This work is still in progress. We have two company cars which are largely engaged in picking up idle units and returning them to a more active service.

We analyze our sales by districts and work hardest in those terri-



C. L. Spurgeon, Los Angeles County distributor for Imperial Gas Co., standing before a bottled gas installation made at the motion picture colony called Malibu-La Costa resort near Santa Monica, California, with equipment picked up in the manner described in the accompanying article. Note the bench where the tired dealer may rest after making deliveries.

tories where consumption per customer is lowest, or where an abnormally high investment in equipment is indicated.

The tanks and regulators which are owned by our company are leased to the customers. Leases call variously for from two to three refills per year. If this much gas is not purchased we have the option under our agreement of picking up the equipment. A customer-by-customer check indicated that in many cases customers had not purchased a refill for two or three, or even five years. In one case, for instance, two cylinders and a regulator had been tied up to serve gas to a single gas light in a slaughter house where it served as a standby in the event electricity failed. Another outfit served to start a diesel engine and operated for only a few seconds at a time.

War Workers Are Favored

The need is so great, particularly in the crowded areas around defense plants, that we did not feel it was right to force defense workers to cook their meals on back-yard incinerators while "luxury" users held equipment inactive.

In still other cases our units had been replaced by natural gas line extension, or perhaps a new tenant had brought with him his own electric appliances.

This does not mean that any very large number of outfits were idle, but it does mean that in every territory there are inactive units which must be discovered and put to work once more.

Some outfits were in mountain

cabins which had been unoccupied for long periods, their owners having lost interest in their cabin or gone elsewhere.

We found that these part-time users were most reasonable, and were willing when the circumstances were explained to them to turn their outfits over to us as a patriotic service.

Little-Used Cylinders Picked Up

We prepared our way by sending out a letter to these small users, telling them the facts and asking their permission to pick up idle equipment. We quote in part from this letter:

"National defense has created an acute shortage of steel, copper and brass—materials used in your Rockgas system. This critical shortage makes it imperative that every set do its duty.

"Our company is endeavoring to meet a growing demand for new installations for defense workers in such areas as San Diego, San Francisco, Las Vegas and Los Angeles.

"The plain fact is that many Rockgas units are slackers. What we ask you to do may prove a slight inconvenience (a day's wait for delivery of refills), but present conditions made sacrifices necessary.

"We ask that if you have two tanks and are not using more than three refills a year, you turn in one tank to our local representative. We will credit you with the value of the gas remaining in the tank. If you are not using gas at this time, please advise us immediately so that we may return your set to active service.

"We are sending a representative to pick up idle equipment which we must have to supply defense demands. Will you please complete and return the enclosed card immediately. We know that the owners of homes in the Shangri-La area are sufficiently aware of the present emergency and critical nature of the war needs that they will cooperate to the full."

Uses Return Postcard Method

With this letter we enclosed a stamped and self-addressed postcard for the customer's convenience, and advising us what we could do.

We placed the name of the party to whom the card was sent on the bottom of the card so that in the event the card was returned unsigned we would still know who had sent it.

The response, which exceeded our fondest hopes, reflected the patriotic desire of the vast majority of LP-Gas users to help in any way which they can.

This card, sent to all those users

in a certain summer resort who had used less than three refills during the year, yielded 77 regulators and 278 tanks. Of those replying, 61% gave us permission to pick up one tank; 6% advised they were no longer using the equipment (this will be more and more true as mileage rationing reduces pleasure travel); and 6% wrote us to discuss the matter with them.

Most of our customers are better off financially than they have been for a good many years. Except in those cases where there are legitimate reasons for non-payment, we are notifying delinquent customers that unless arrangements are made to pay up back bills, it will be necessary to pick up our equipment.

Sold 48 Water Heaters One Month

It is becoming very difficult, of course, to locate appliances, and sales of new appliances will not soon be possible in any volume. Last month our company located and sold 48 automatic, 20 and 30-gal. water heaters however. This



Home office of Imperial Gas Co., Los Angeles.

is one of the many opportunities for dealers to legitimately expand their business under L-86. And an old appliance restored to service through repair, reconditioning or adjustment is as valuable as a new one in building the gas load. We would recommend that any interested distributor write to the Southern California Gas Co., Los Angeles, who are conducting a water heater reconditioning campaign.

Keeping track of the changing aspects of the priorities and allocations system is sometimes rather difficult. We have found it helpful to prepare a binder in which is contained all materials applicable to the various government regulations affecting our business. The material is kept current by inserting material from the BUTANE-PROPANE NEWS, the L. P. G. A. bulletins issued by the Association, and from the "Victory" magazine which is the official weekly publication issued by the Office of War Information is obtainable from the Superintendent of Documents, Washington, D. C.

Our "Priorities" binder includes sections on:

1. P.D. 397 applications authorized,
2. P.D. 397 applications pending,
3. P.D. 397 applications denied,
4. Copies of our purchase orders certified in accordance with Government Order P-100,
5. Copies of our purchase orders covering re-extension of ratings,
6. Copies of the official regulations and interpretations relating to prices, appliances, liquid gas equipment and other miscellaneous orders such as those covering transportation.

We have found Frank R. Fetherston, secretary of the Liquefied Petroleum Gas Association, 11 West 42 St., New York City, most helpful in advising us about various regulations.

We also maintain for our own information a perpetual inventory of "Equipment Available for Reinstalation Under L-86." This is the formula: Repossessed equipment (after April 8, 1942) plus exceptions granted under L-86, minus new installations equals the equipment available for reinstalation. By this means we know at all times exactly where we stand, and this should also prove of value and assistance to any government auditor.

In summary we would say that the liquid gas industry has been very fortunate; that those administering the law in Washington are competent and considerate; and that the industry can use to good advantage any spare time it may have by analyzing its operations, simplifying them, keeping fuller and more adequate records, weeding out poor customers, and keeping abreast of new developments.

As conditions change, ingenious ideas and developments will compensate for many difficulties. Our own records indicate a better use is being made of our equipment since the freezing order, which has resulted in an increased gallonage. It might be interesting for some modern-day Darwin to note business men's "natural adaptation" to their war-time environment, or for some modern-day Emerson to write an essay on the "Compensations of Regulations."

Butane Brooders Guard Chicks Against Sub-Zero Weather

POULTRY production is fast being placed on a new wartime efficiency level throughout the country. It is in keeping with this trend that J. C. Paschall, veteran chicken breeder, has recently completed the installation of a 550-gal. butane storage system in his plant near Dallas, Texas. The installation of this equipment was handled by Ewing Butane Gas Co., of Dallas, under the supervision of Robert Ewing, president.

Chickens both for market and egg production are raised on the Paschall plant to meet the ever-increasing war-world demands for this type of food. To further facilitate the raising of the chicks 20 Oakes brooders, each capable of accommodating 250 birds, have now been installed. All brooders are butane-fired.

The Paschall farm home has also been serviced by the Ewing company with LP-Gas heating equipment, including a kitchen gas range, water heating plant and an Electrolux gas refrigerator. A second water heating plant is to be installed soon in the poultry slaughter room to facilitate dressing of chickens.

The construction of buildings to house equipment is of basic importance, says Mr. Paschall, and the floor plan should be selected with care, for even in Texas, where

By JOHN D. MUELLER

winters are mild, temperature fluctuations are fatal in the brooder business. However, it is possible for the chicken raiser to provide himself suitable buildings at a nominal cost, which will be adequately heated by the brooders, alone, and safely protect baby chicks at temperatures as low as 5° to 10° below zero.

In Mr. Paschall's mass production plant a horizontal or "colony floor plan" is employed. It consists of pens in series paralleling a narrow aisle the length of the building, and increasing in size, one after another. The chickens in this system move from pen to pen, week after week, through the 10-week period required for their growth from incubator chicks to birds of market weight.

Sizes of pens begin with the area required to accommodate approximately 250 chicks, and enlargement occurs each week as size increases. Thus, the first two pens are $7\frac{1}{2} \times 10$ ft. The pens next in line are 9 x 10 ft., and the third pair are 10 x 11 ft.

This graduating of size is important, Mr. Paschall states. In the first pen, obviously, the chicks are tiny things, and receive maximum warmth because of the small size

of the pen. As the chicks progress in growth, not only is greater space required for them, but less artificial heat. Hence, there is no danger in stepping up the pen area while holding the brooder heat uniform.

The pens are simple in construction. They consist merely of frames, of sizes indicated, of white pine lumber, one inch thick and eight inches wide. Each frame is provided with a wire floor of quarter-inch mesh, of medium gage. Floors are built to keep the chicks several inches—three or four—up from the building floor. Each pen need only be lifted to be removed. There is a narrow space, approximately one foot, between the pens.

The center butane fuel line into the 24 x 100 ft. building has a diameter of 2 in. The fuel line runs down the building length. At the exact center of the space between each pair of pens the fuel line is

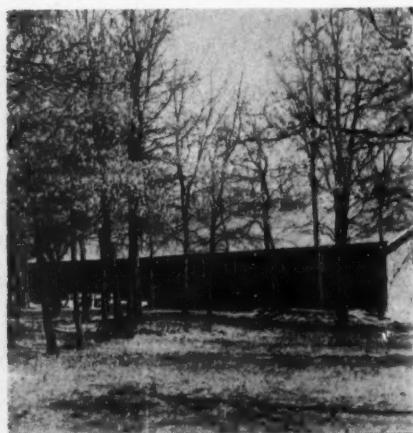
cut to accommodate a tee reducing to one-inch feeder lines, which reach out, left and right, to exact overhead center of the pens. These feeder lines, in turn, next are teed down to half-inch size by use of bushings.

Each feeder line, on each side of the building, is thus enabled to fuel two brooders. The use of flexible hose makes possible the movement up and down of the brooders as the thermostatic controls indicate, without effect on operation of an adjoining one.

In building his plant, Mr. Paschall erected a retaining wall, the size of his building, of concrete. This area he then filled with gravel to a depth of 16 in. Next, this base was covered with asphalt. In this manner his building was furnished with an insulated floor. Since asphalt improves in quality with use, as the so-called "bleeding" process takes place, and there would be an insufficient traffic in his plant to attain this, he covered the floor area with small gravel. Over this, after it had been well pressed into the asphalt, has been placed a layer of fine sand. Exterior walls of the building and its roof are covered with slate roofing material and interior walls with asphalt paper.

Centering each of the pen areas, on each side of the building, are windows 18 in. x 24 in. These are hinged and swing down. At either end of the building windows have been installed, also.

This window arrangement is important for fresh air entering the building flows up to the ceiling area, not down into the brooder areas, and the windows at either



In the Paschall poultry production plant near Dallas, Texas, there is a window for each chick pen to permit free ventilation without creating dangerous draughts.

end cause the air flow to take place along the ceiling area, not the lower brooder levels. In this manner danger of draughts is greatly lessened.

This elimination of draughts through the area not only has eliminated pneumonia from the chick stock housed in it, but materially influences the fuel bill. It prevents the airing-out process materially affecting the temperature levels.

Mr. Paschall points out that use of butane makes possible maximum efficiency of sterilization at minimum of cost and required equipment. Each of the mobile pens is removed as a batch of chicks moves along, and then thoroughly cleansed. An ordinary gas torch is then applied, burning LP-Gas. Each pen thus is seared by heat following its occupancy by each successive group of chicks. This application of heat kills any lurking germ. The death rate of Mr. Paschall's chicks is at present less than 1%.

The Paschall plant is not limited to production of fryer stock, though this will be its major operation for the present. There are now in the pens one brood of some 500 hen stock chicks. These will have attained pullet size by this fall. It is planned to build a hen flock of some 1500 for egg production. Also, Mr. Paschall plans later to install incubator equipment to hatch out his own stock.

When the plant has been completely equipped, the water heater will make possible the efficient slaughter and handling of birds as they attain market size. The water pump has been found by Mr. Ewing to be one of his most trustworthy



One of the chick pens showing the manner in which the LP-Gas is transmitted to the brooders, a feeder for each two. The chicks are well scattered, not bunched under the brooder.

aids in selling butane equipment to Texas prospects; and in this installation it has a place of first importance. It is a sealed pump unit, self-oiling and requiring no attention. The conveniently placed outlets for the length of the building greatly facilitate the cleaning operations, as well as the watering of poultry stock.

"There not only is to be increasing need for eggs for freezing and powdering," says Mr. Paschall, "but I am sure the government will begin to stress the increased eating of chickens in order to relieve the demand on pork and beef products. The farmer can secure all the help he needs to get started producing eggs and chickens. He can get the

money to buy his stock, and start feeding them. In my experience there has been nothing to produce better results than butane for my brooders. I feel it is superior to any other fuel."

Brooders Serve as Heaters, Too

"I get temperatures of 95° to 98° at the center of my brooders, and to 88° outside them. If you will observe the chicks in the pens, you will see that they are scattered all about. They are not all huddled together. If you will get up near the ceiling—it is 14½ ft. at ceiling level—you will find it is genuinely hot up there. There is no need for any auxiliary heating when these Oakes brooders are used properly. We can have temperature down to 5° to 10° below zero without danger to our smallest chicks. By the simple expedient of swinging our windows down from above, we have eliminated draught danger altogether. I have made temperature tests all over the plant. They indicate one thing—there is uniformity throughout! We will have other buildings erected to handle our stock as we require. We will be able to handle some 11,000 chicks at once," concluded Mr. Paschall.

Mr. Ewing states, "The Paschall job shows in some degree, I think, what the butane dealer can envisage as an example of the LP-Gas equipped farm of the future. It is not a large establishment, only four or five acres, yet it has every modern device which will make it succeed. It has taken virtually every city convenience to the farm; and LP-Gas is back of the biggest share of it."

Commercial Cooking Group Organized by WPB

The War Production Board has organized the Plumbing and Heating Commercial Cooking Equipment Industry Advisory Committee. This committee is working with the Plumbing and Heating Branch of WPB.

The function of this committee is to advise in connection with the new WPB order on commercial cooking, baking and warming equipment other than that heated with electricity. The new order is expected to simplify procedure in manufacturing and distributing food service equipment and at the same time still further save critical metals.

The committee is composed of the following equipment manufacturers: Albert Pick Co., Inc., S. Blickman, Inc., American Stove Co., Detroit-Michigan Stove Co., Groen Mfg. Co., Cleveland Range Co., The G. S. Blodgett Co. Inc., Standard Gas Equipment Corp., Majestic Mfg. Co., and Dohrman Commercial Co.

W. H. Frick, E. J. Shermire and W. Frank Roberts are members of the A.G.A. Food Service Equipment Committee; these represent American Stove Co., Detroit-Michigan Stove Co., and Standard Gas Equipment Corp., respectively.



California August Production Totals 12,138,000 Gals.

Liquefied petroleum gas produced by refineries and at natural gasoline plants on the West Coast during August totaled 12,138,000 gals., according to the report of Edward T. Knudsen, head of the Petroleum Economics Division of the U. S. Bureau of Mines at Los Angeles. Practically the entire production is from California.

The demand during the same period was 11,676,000 gals.

THE BOTTLED GAS MANUAL

Chapter 15 Types of Water Heaters

In Two Parts — Part 2

Part 1 of Chapter 15 of the Bottled Gas Manual appeared in the October issue of BUTANE PROPANE News, Page 22. Questions and Answers for both parts are given this month.—Editor.



Side-Arm Heater Water Outlet Connections. All of the ways in which the top connection between a side-arm water heater and a hot water storage tank can be made are illustrated in Fig. 6. The method illustrated in "A" is the ideal one in that there is room between where the top connection enters the tank and the top of the tank for a reserve supply of hot water to accumulate. When hot water is drawn out of pipe "H" the draw is distributed over a considerable area with the result that the temperature of the water drawn remains consistently even.

In "B" is illustrated a common method of making the top connection. Providing that a by-pass tee is used at point "T" this method of connecting will prove reasonably satisfactory although it is not as good as the method described in "A". If a by-pass tee is not used the majority of the water drawn out through "H" will come directly through the heater. This results in excessively hot water if the draw

is light, and cold water if the draw is excessive and beyond the capacity of the heater to supply.

The method illustrated in "C" invariably gives the same results as those described for "B" if a by-pass tee has not been used. This is a poor top connection, and should be avoided if at all possible.

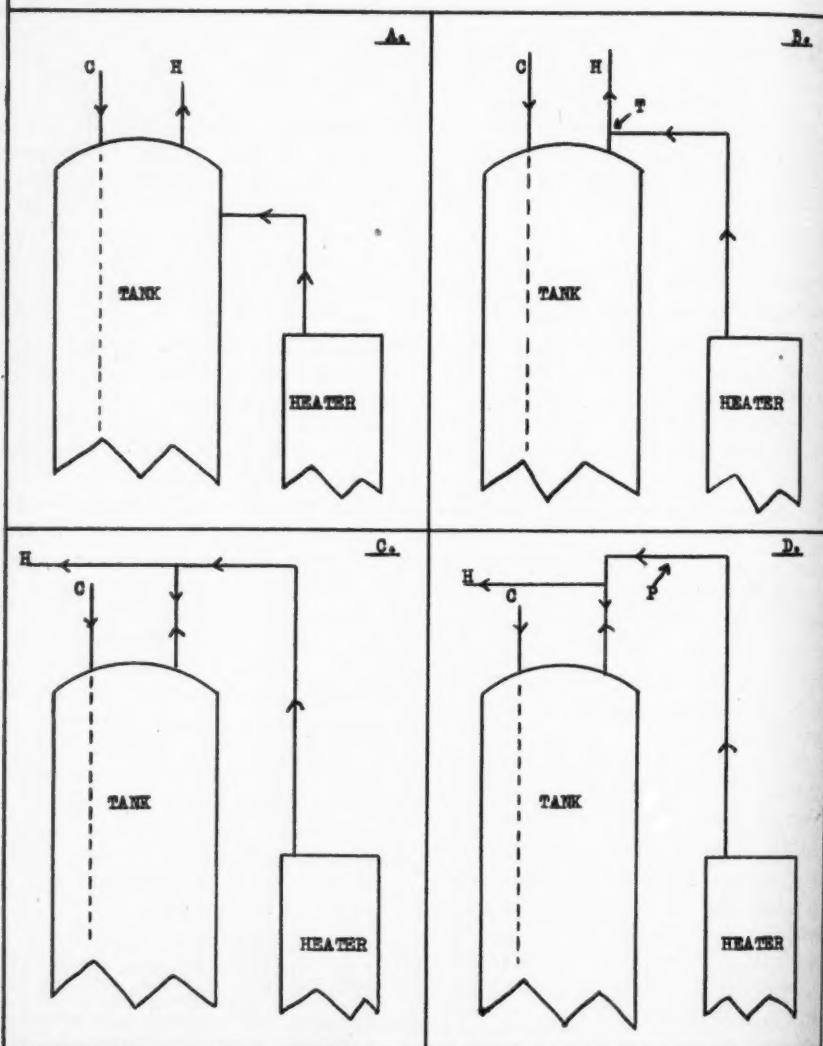
In "D" is illustrated the worst connection that can possibly be made. There is a certain amount of free air in all water, and this will accumulate at point "P", eventually breaking the circulatory route through the heater. When this happens the heater will not supply any hot water although it is in operation continuously. Steam may accumulate at this point, causing the water to flow out through "H" intermittently and with an almost explosive force at times. If this method of connecting is unavoidable, a tee and a bleeder valve should be installed in line "P" and every few days the excess air which has accumulated here should be bled off.



• The Bottled Gas Manual series by C. C. Turner, started in the July, 1941, issue of BUTANE-PROPANE News and will continue to be published monthly in chapter form until completed. This series constitutes a valuable text book and field manual that should be invaluable to everyone in the liquefied petroleum gas industry.—Editor.

FIG. 6

FOUR METHODS OF MAKING TOP WATER CONNECTIONS BETWEEN HOT WATER TANKS AND SIDE ARM WATER HEATERS.



Side-Arm Heater Water Inlet Connections. The methods by which bottom connections between a side-arm water heater and a hot water storage tank may be made, boil down into six ways, and here lies fully as much potential trouble as in the top connections, if not more. Fig. 7 illustrates these six ways, and method "A" is the ideal one. Method "B" is almost as good, but circulation is slowed down by the introduction of the two ells. The danger in method "C" is that sediment may accumulate in the lowest horizontal pipe connection, thereby plugging it and preventing water from reaching the heater. This may result in a burned out heater.

The same danger exists in method "D" excepting that the sediment will gather in the bottom of the heater instead of in the pipe, in which case the same serious results can be expected as in "C".

Method "E" is a modification of "D". While some sediment might be expected to settle in the bottom of the tank because of the side connection, a considerable amount of it will settle in the bottom of the heater because the circulation is slowed down by the two elbows.

Method "F" is sometimes employed when the tank is too large and it is desired to heat only small quantities of water. While in theory the water lying below the side-arm pipe connection will not be heated, in actual practice it is heated by conduction and somewhat by convection but not sufficiently to be of any benefit. It is an expensive way of substituting a large for a small tank. Better buy a tank

of the size desired. It will be cheaper in the long run.

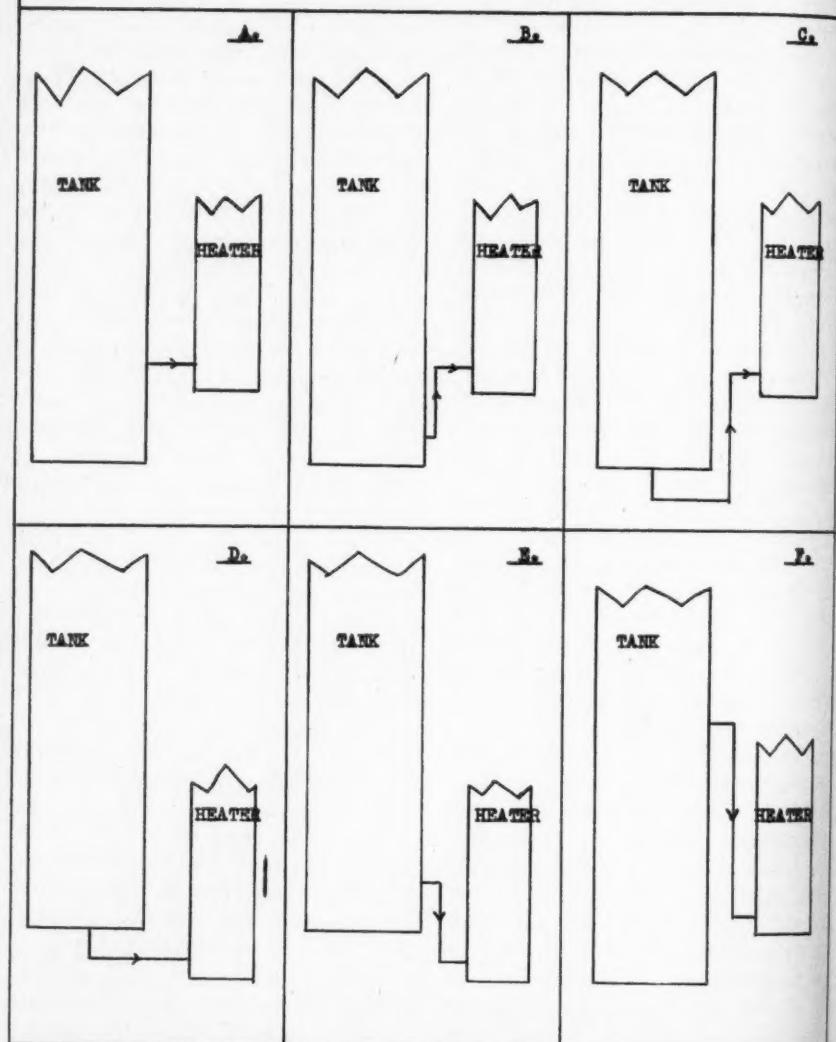
Operating Characteristics of Side-Arm Heaters. The efficiency of a side-arm heater can be fully as great as that of a storage water heater while the burner is in operation, but when the burner is extinguished we have an entirely different condition and its economy ceases. Let us turn back to Fig. 1. While the burner is in operation the circulation of the water in the system is from the bottom of the tank, up through the heater coil and into the top of the tank again. When the burner is extinguished this circulation reverses itself. The hot water in the tank is naturally going to settle as it cools, and some of it is going to find its way down through the heater coil. Because warm air rises there is a draft up through the heater and it in reality becomes a refrigerating unit. Circulation is speeded up by this cooling action, with the result that heat losses really are considerable.

There is a remedy for this condition which will give reasonably satisfactory results. Put a good swing-type, horizontal check valve in the lower pipe connection between the heater and the tank, but be sure that you install it so that cold water can flow from the bottom of the tank *into* the heater, but water from the bottom of the heater cannot flow into the bottom of the tank. You will find that this will make an appreciable saving.

"Wrap-Around" Conversion Units. There are two or three such conversion units upon the market designed for direct application to

FIG. 7

SIX METHODS OF MAKING BOTTOM CONNECTIONS BETWEEN HOT WATER TANKS AND SIDE ARM HEATERS.



a hot water tank without interference with its existing plumbing connections. Heat from the burner is transferred either by radiant means or by circulation of the hot flue gases around the exterior of the tank. The radiant models have a small input burner near the bottom of the tank and to one side of it. Above the burner is a small combustion chamber and leading from this are brass flue pipes. Behind the flue pipes is a reflector, and the section of the tank immediately opposite the reflector is painted black for absorption purposes. Around the entire tank and heater assembly is a heavily insulated casing. The thermostatic element is in direct contact with the exterior of the tank and fits closely between the insulation and the tank wall. The insulated casing may be cut to accommodate existing pipe connections. This makes a neat and efficient conversion unit.

The circulatory type of "wrap-around" conversion units have an outer insulated casing which is kept from direct contact with the tank by fins which direct the products of combustion in their upward journey so as to give up the majority of their heat to the tank surface. These conversion units are also very satisfactory and efficient.

Automatic Storage Water Heaters. The analysis of automatic storage water heaters becomes pretty much a study of burner inputs and tank capacities. Theoretically, the B.t.u. input of a burner should supply the total daily hot water requirements, letting the tank take care of peak demands. In field ex-

perience, however, it must not be expected that the theoretical can often be attained. Most installations are compromises between the two. Water heaters are built with inputs varying from 2500 to in excess of 100,000 B.t.u. in combination with tanks of from 10 to 40 gals. capacity for the average house. They are generally classified as "Slow Recovery Water Heaters," "Medium Slow Recovery," "Medium Fast Recovery," and "Fast Recovery." All have their places in the field.

Water Heater Efficiencies. There are many factors that enter into the efficiency of water heaters. They include design, degree of insulation, burner type and location of burner, size of pilot flame, type and size of flue, location of heater, scale deposits and operating conditions.

New water heaters of the automatic storage tank type will vary in efficiency from 50% to 75%.

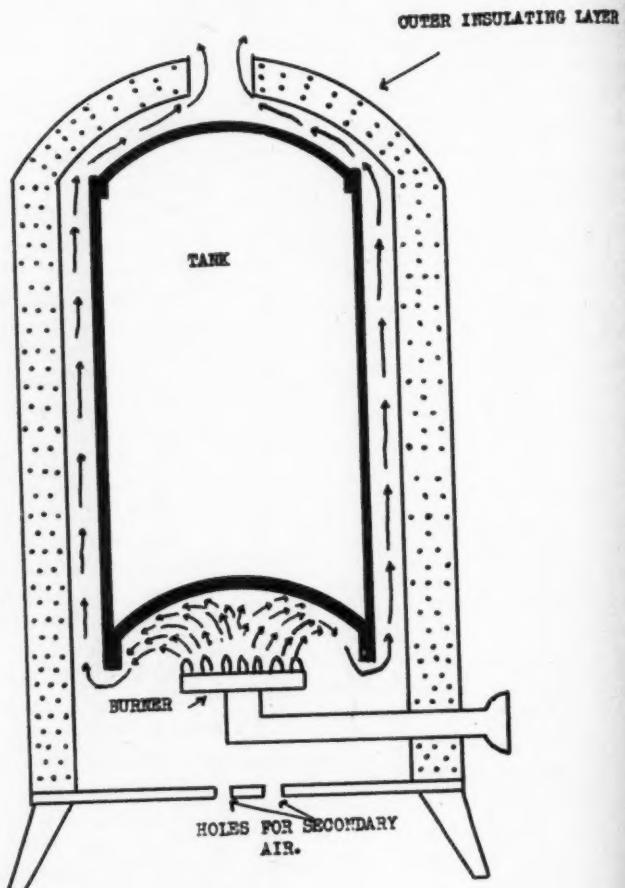
Most service calls due to high bills on water heater operation are due to improper installation, high line losses, or excessive scale deposits on the heat transfer surfaces.

The efficiency of a water heater is the percentage of the heat available in the gas burned that is recovered in hot water.

If a heater recovers at the rate of 30 gals. per hour over a 60° temperature rise with a 20,000 B.t.u. input, the efficiency would be: 30 gals. per hr. \times 8.33 lbs. per gal. \times 15,000 B.t.u. per hr.

$$60^{\circ}\text{ F.} = \frac{20,000 \text{ B.t.u. per hr.}}{75\% \text{ efficiency.}} =$$

FIG. 8
ILLUSTRATING FLUE TRAVEL OF AN UNDERSERVED OR KETTLE TYPE WATER HEATER.
(Gas controls and water connections not shown.)



Kettle Type, or Underfired, Water Heaters. Such a heater is illustrated in Fig. 8. These are usually of the fast recovery type, and because a large surface area is exposed to flue air travel when the burner is inoperative, thereby transmitting large amounts of heat from the water to the air traveling through the flue, they are liable to lose efficiency if improperly sized for the job. Their particular field of usefulness is either where the draw is heavy and continuous or where it is of such an intermittent nature that the thermostat can be set down to pilot operation only, for considerable lengths of time.

Internal Flue Type—Straight Flues. In Fig. 9 it will be seen that the flue passes up through the storage tank and it is placed off-center and out of alignment with the burner so that much of the heat is transmitted through the bottom of the tank. These heaters are usually of the medium fast recovery type. They are more efficient than the kettle type heater but not as efficient as some other types which we shall consider.

Internal Flue Type—Baffled Flues. These water heaters (Fig. 10) cover a wide field which starts with slow recovery units. They cover the medium slow recovery market and also penetrate into that classification of usage which requires medium fast recovery water heaters. Their efficiency as slow recovery units is very great and correspondingly less in the medium slow and medium fast fields because of the necessity of larger heat inputs, higher stack tempera-

tures and consequently greater losses. One particular make which is often dubbed "the honeymoon special" because of its great flexibility and provision for increased output as the size of the family increases, has a series of different input burners which are carefully balanced to corresponding baffles. Burners and baffles are very easily and quickly changed.

Dampered Flue Water Heaters. There are upon the market some water heaters which have a damper at the top of the flue. The damper closes when the main burner shuts off, and opens when the main burner comes on again. The theory of such an unit is excellent, and when such a damper is combined with baffled or inverted "U" type flues very high efficiencies may be obtained. The principle objection to dampered flues has been the possibility of failure of the actuating mechanism, but as improvements are made and the public becomes educated to the advantages of this type heater they promise to become very popular and of great value to the industry in meeting competitive water heating conditions where cheaper fuels have been a serious factor.

Inverted "U" Flue Water Heaters. The inverted "U" flue water heater is probably as efficient a unit as there is on the market today. Its application has been pretty much confined to slow and medium recovery water heaters, although fast recovery units are built.

Let us study Fig. 11 for a moment. When the main burner is in operation the flow of hot, burned

FIG. 9
ILLUSTRATING FLUE TRAVEL OF A STRAIGHT-THRU FLUE TYPE WATER HEATER.
(Gas controls and water connections not shown.)

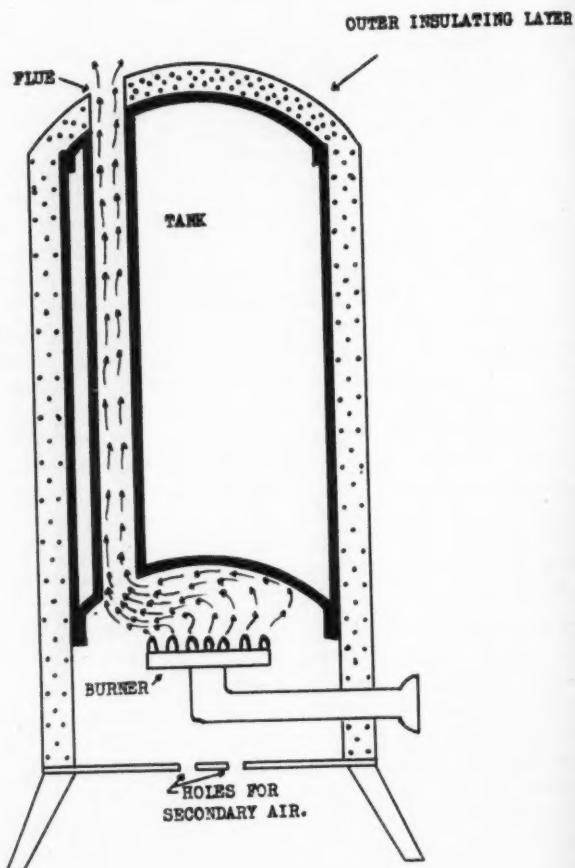
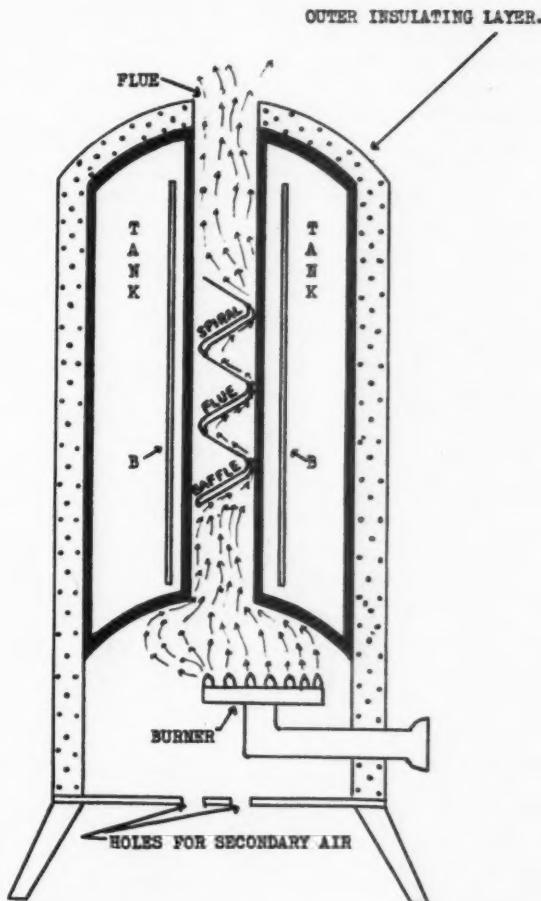
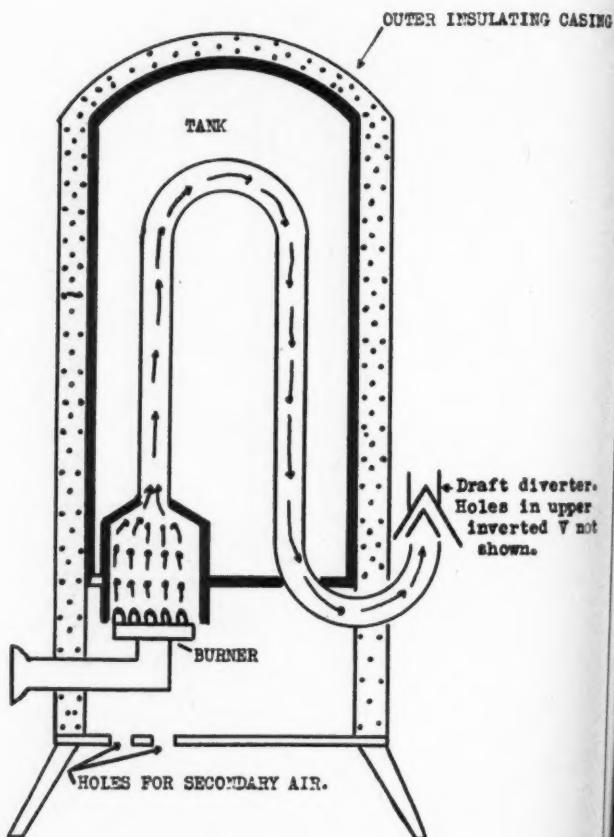


FIG. 10
ILLUSTRATING FLUE TRAVEL OF A BAFFLED WATER HEATER. (SOMETIMES CALLED CONVERT-
IBLE AUTOMATIC STORAGE GAS WATER HEATER.)
(Gas controls and water connections not shown.)



B = a water baffle, cylindrical in shape, and open at top and bottom. This causes quicker travelling of the heated water to the top of the tank.

FIG. 11
ILLUSTRATING FLUE TRAVEL OF AN INVERTED U BALANCED FLUE TYPE WATER HEATER.
(Gas controls and water connections not shown.)



gases follow the inverted "U". We know that warm air rises. When the main burner is extinguished the flow of air in the flue leg immediately over the burner continues to rise, but the flow of air in the other leg reverses itself. It will be noted that this causes the flow in one leg of the flue to counteract the flow in the other one, and a heat trap at the top of the inverted "U" is the result.

Another Type of Inverted "U" Flue Water Heater. The water heater illustrated in Fig. 12 is really an inverted "U" flue heater, the space between the storage tank and the outer insulating housing forming the second leg. While on first thought it would not seem that this type of heater would be as efficient as the inverted "U" type heater previously described, there is little if any difference in this respect. When the main burner is in operation the combined flue and external tank area provides a large surface for the transfer of heat, and flue temperatures are extremely low. When the burner is not in operation it is a fact that the two flue legs are not quite as nicely balanced as in the balanced flue, for which reason there is apt to be back draft down the flue immediately over the burner, but this condition is practically compensated for by the excellent transfer of heat when burner is in operation.

Concentric Balanced Flue Water Heaters. Concentric balanced flue water heaters (Fig. 13) are not, strictly speaking, either of the inverted "U" flue type or balanced. The cross section area of the outer

flue is the same as that of the inner flue, but its upper end is plugged, or dead-ended. The theory of its operation is that when the main burner is inoperative the temperature within the outer flue is raised by the surrounding hot water, but the temperature of the inner flue is correspondingly high because of the operation of the pilot light. If this is the case there can be no heat loss from the outer flue to the inner flue because of the fact that heat always flows from a higher to a lower temperature level. When the main burner is in operation heat is transferred to the water by the raising of the temperature of the trapped gas in the outer flue and this is caused by direct heat from the burner as well as that transmitted to it from the inner flue walls. These heaters, if properly balanced, are very efficient, but it will be noted that the correct pilot input is an important factor.

Radiant Type Storage Water Heaters. The principle of these units is exactly the same as that of similar heaters sold as "wrap-around" conversion units, and previously described. They are very efficient and are rapidly coming into favor.

Selection of the Proper Water Heater. We have briefly described many types of water heaters, and our heads are apt to be in a swim if we consider them from this angle of constructional details. We do not purchase a certain make of automobile because of its constructional details, but because those constructional details give us the comfort, speed and economy that

FIG. 12
ILLUSTRATING FLUE TRAVEL OF AN INVERTED U BALANCED FLUE TYPE WATER HEATER IN WHICH SPACE BETWEEN THE TANK AND OUTER INSULATING HOUSING CONSTITUTES ONE FLUE LEG.

(Gas controls and water connections not shown.)

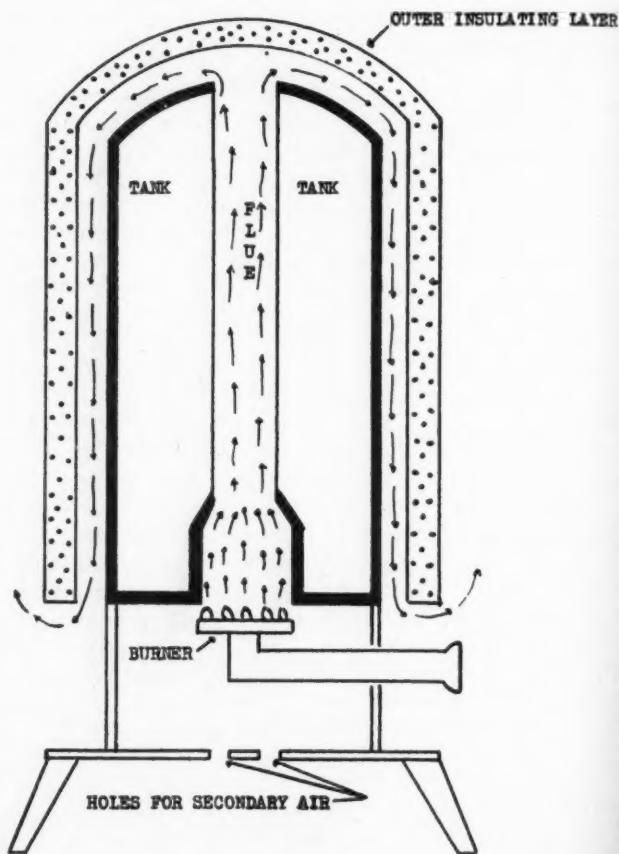
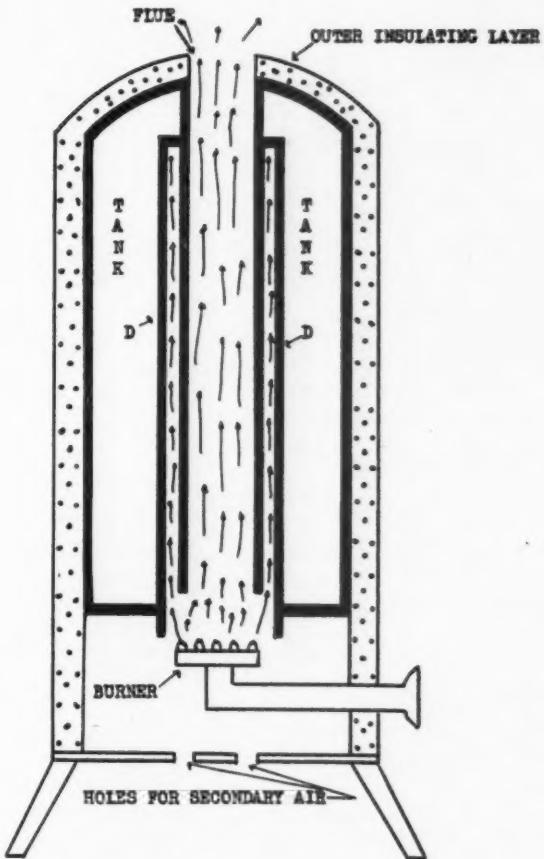


FIG. 13
ILLUSTRATING FLUE TRAVEL OF A CONCENTRIC FLUE TYPE WATER HEATER WITH THE
OUTER FLUE DEAD-ENDED.

(Gas controls and water connections not shown.)



D—The dead-ended outer flue.

we want; therefore, these features are secondary to our desires. Likewise, in selecting a water heater we must not make our choice on the basis of its flue or control construction, but because these features give us the *desired results*. In making our selection we must ask these questions:

1. Will it furnish all of the hot water that is wanted and when it is wanted?
2. Will it do this economically?
3. Will it function with safety and complete freedom from trouble?

In other words, our choice boils down to a matter of heat inputs and tank capacities, after which we consider constructional details.

We cannot answer these questions tonight, for our allotted time and space is already passed, but in our next session together we will see how *all* water heaters enter into the picture, and how simple this matter of proper selection is.

Now let us see what we have really learned tonight! Test yourself on the questions following and then check yourself with the correct answers to be found on Page 60.

•

Questions on Chapter 15

1. What are the three general types of water heaters?
2. Which of these three types is not recommended?
3. What is an interval timer?
4. Why is a check valve desirable in the lower water connection between a side arm heater and a storage tank?

5. In addition to controls which shut off the gas supply, what two safety devices should be installed on a hot water tank?
6. In reference to burner inputs, how are water heaters classified?
7. What is the basis of most recovery ratings given by manufacturers?
8. What is the theory of an inverted "U" flue?
9. If a water heater has an input of 30,000 B.t.u. per hour and furnishes 30 gals. of 80° rise water per hour, what is its efficiency?
10. What three things do we want of a water heater?

•

(*Chapter 16 of THE BOTTLED GAS MANUAL* will appear in the December issue of BUTANE-PROPANE News.)

◆ ◆

Fred C. Platt Is New Oil and Gas Inspector for Montana

The Montana Railway State Public Service Commission has appointed Fred C. Platt to the position of state oil and gas inspector, succeeding T. H. Harriman, resigned.

Mr. Platt is a petroleum engineer and geologist and a Montana operator.

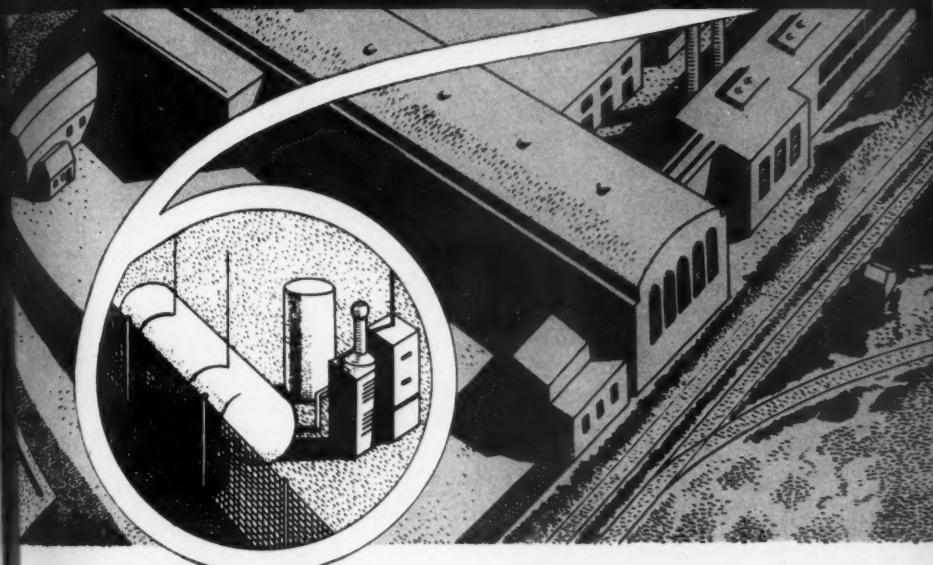
◆ ◆

Limits Are Off For Gas Heater Units

By Amendment No. 1 to L-1 production limitations have been removed by the WPB on gas and oil unit heaters.

Their adaptability to economical and efficient heating of war plants influenced the decision.

GAS FOR WAR PLANTS



Algas Units produce a dependable, continuous gas supply right on the premises. As stand-by units they insure continued production should lack of supply or crippling of mains shut off war plants from usual fuel sources. For full time operation—or for emergency use—Algas Units are dependable and economical.

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Bastian-Blessing is blazing a road to victory. It is bringing new skill and ingenuity into the production of equipment for using and controlling high pressure gases. Its products, which are identified by the RegO trademark, are meeting today's most vital demands for our Army and Navy. They are helping to win the war.

The illustrations show a RegO LP Gas installation by the Illinois Bottled Gas Company which operates the drying ovens, annealing furnaces and saltpeter baths of a huge shell case plant. The system can supply a continuous load of 3,100,000 BTU per hour from a 120 cylinder manifold and includes an automatic throwover, duplicate standby and automatic controls.

You too can help the war effort by doing the job better with LP Gases. RegO factory trained sales engineers are at your service.

sure perfect performance and economy by insisting on genuine Bastian-Blessing products identified by the RegO trademark.

The **BASTIAN-BLESSING Co.**
4233 Peterson Avenue Chicago, Ill.

Leaders in equipment for using and controlling high pressure gases.



Machinery Plant Using Butane Meets Natural Gas Competition

WHEN R. G. LeTourneau plans an expansion program which includes a new plant he naturally takes into consideration railroad facilities, labor supply, housing conditions, fuel supplies and the many other factors that enter into a desirable plant location. Another problem is to find plenty of land for storing the big machines—hundreds of them—until shipment. Much testing and experimental earth moving is carried on in the further development of the huge heavy-earth-moving machinery. Plenty of space is a necessity, so occasionally some of the other conveniences are passed up in order to get plenty of land on a suitable railroad. As a result the two newest Southern plants are miles from natural gas but are meeting the demand for increased production of our regular earth-moving machinery and new shell contracts by turning to butane—which is delivered in tank cars.

The first system installed was very simple, designed to use only 20 gals. of butane an hour. Another tank is being installed to increase the capacity of this original system. In the other plant even greater use of butane is being made and more than 300 gals. of butane will be used each hour.

The tank for this system was fabricated here in our own plant,

- The accompanying article describes a butane installation in a heavy earth-moving-machinery plant which enables the manufacturers to successfully meet the competition of firms that are located on natural gas mains. It was prepared by Robert L. Flanagan, superintendent of the Vicksburg, Miss., plant, and James F. Haynes, assistant industrial relations manager, of the Toccoa, Ga., plant of the LeTourneau Co. of Georgia, and will be instructive to others who have power fuel problems to solve in districts removed from sources of natural gas.—Editor.

an all-welded steel tank of 14,600 gals. capacity. The tank was buried underground to maintain more even temperatures and constant pressure. In addition, an underground tank is out of the way of plant traffic or storage space.

A stand pipe is installed in one end of the tank to draw off liquid into the supply pipe which runs into the plant. A man hole is installed in the other end of the tank and contains two 125-lb. relief valves with a 2-in. pipe extended about 10 ft. above these valves in event pressure in the tank should ever become great enough to blow off. Butane has approximately 26 lbs. per sq. in. pressure at 60° F., but if and when propane in the liquid is increased the pressure will be higher with the same temperature.

A 2-in. filler valve for filling the

"TAKE
A
LETTER



To RANSOME CO.'—

"KNOWING that you manufacture all kinds of heat treating furnaces, we would be pleased to have one of your engineers call and give us an estimate on a unit suitable for heating 47# channels."

Such inquiries from war industries are "right down our alley." If you have problems in heat treating, or forming structural shapes, give us full details on your requirements, and we will gladly furnish drawings, specifications and prices.

RANSOME COMPANY

Designing and Constructing Engineers

4030 HOLLIS STREET • EMERYVILLE, CALIFORNIA

Ransome

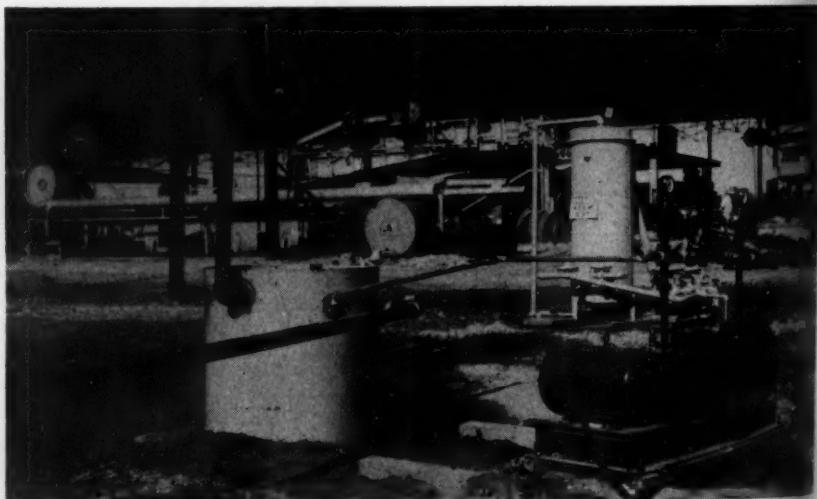
tank is located in the man hole. A $\frac{3}{4}$ -in. pressure equalizing valve is installed to allow hooking a hose to the tank car while filling up the tank.

A small vapor differential transfer system is used for filling the tank from the tank car. It was manufactured by L. C. Roney, Inc., Los Angeles. The compressor unit draws vapor pressure from the storage tank and forces it into the tank car. When the pressure in the tank car is a few pounds more than in the storage tank the liquid is forced through the 2-in. hose into the storage reservoir. This compressor unit has the advantage over other methods of unloading in that it can recover the waste fuel from the tank car which has turned to vapor. This is accomplished by reversing the valves on the compressor, drawing the vapor out of the car, compressing it to a liquid and pumping

back into the storage tank. This type system has rapidly paid for itself in our operations, since the vaporized butane which is saved amounts to 200 or 300 gals. for each car unloaded.

A slip tube gage is installed in the man hole for checking the gallons of fuel in the tank. A pressure gage is also located here in the man hole. Excess flow valves are installed in the tank before every valve. If the valve should break or be knocked off, the excess flow valve will automatically close.

At the liquid outlet line which runs into the plant two liquid regulators are installed. These reduce the pressure to approximately 20 lbs. and allow the liquid to expand and become a butane vapor. A 2-in. line runs into the plant. This line is about 300 ft. long to the first furnace and the butane becomes completely vaporized before reaching



Compressor type transfer system used for filling tank from car.

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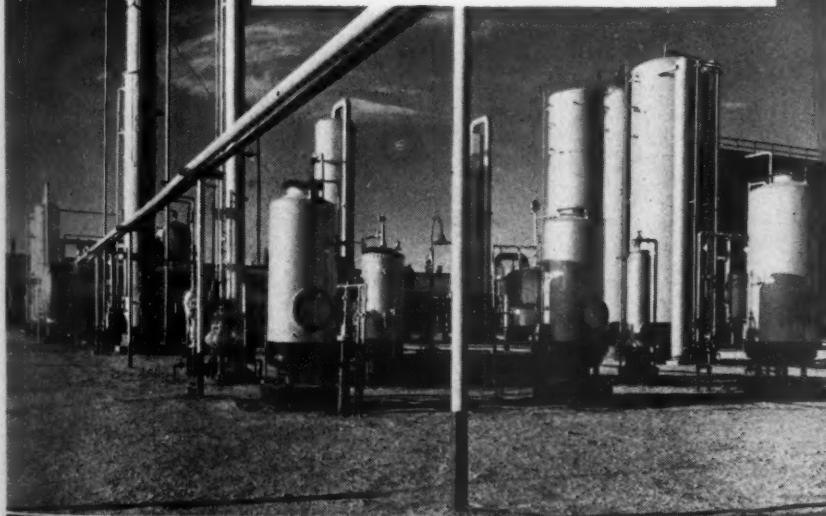
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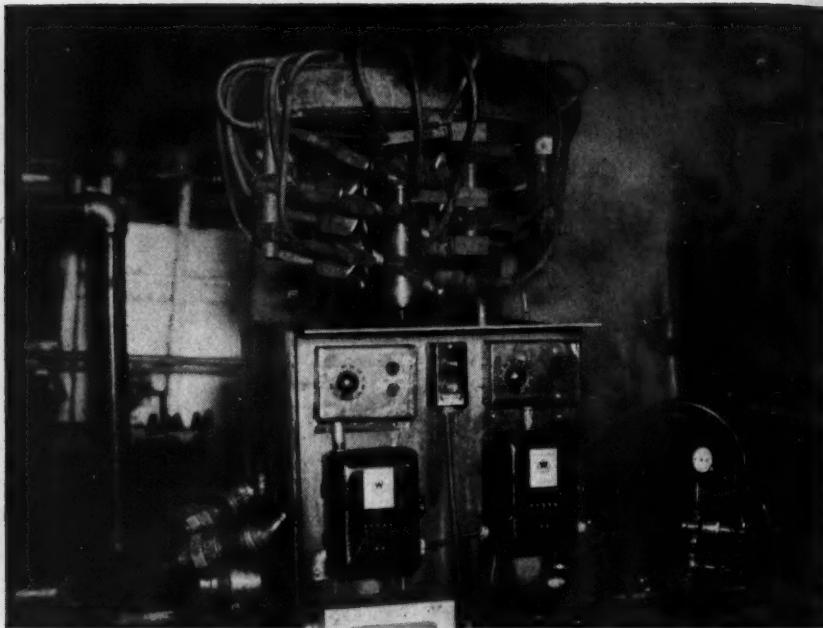
LIQUEFIED PETROLEUM GAS

Back of Warren's Butane and Propane—so important now on the war and industrial fronts—are the plant facilities that make their use safe and sure; Warren's large fleet of tank cars, storage and loading facilities, with several terminals strategically located.



WARREN PETROLEUM CORPORATION

Tulsa, Oklahoma



General view of shell heat treater, using butane as fuel supply and showing controls and regulators.

ing this first furnace. At the furnace a vapor regulator reduces the pressure to 6 oz.

The unloading hose is of synthetic material and contains a metal or copper wire to ground the tank car to the storage reservoir. The motor on the pump is explosion-proof and all switches and wiring are sealed.

On the new plant set-up a forge furnace, heat treating furnace, draw furnace, nose heater and washing machine for shells, and a 1000-hp. engine will use more than 300 gals. of butane per hour. To handle this a vaporizer was needed to supply heat to the expanding liquid forming butane vapor be-

cause the pipe would freeze up very quickly.

The 1000-hp. engine alone will burn 90 gals. an hour and is located about 600 ft. from the butane tank. A 1-in. pipe was laid from tank to engine to carry the liquid and a vaporizer installed in the engine house to convert the liquid to butane vapor. Hot water from the engine will be pumped through the vaporizer, thus saving the cost of heating this water.

One square foot of effective inside heating area in a vaporizer will vaporize 6 gals. of butane per hour if a temperature of 160° F. is maintained in the vaporizer. If cooler water is used the heating



*"Proud of the Achievement of the Men and Women
of the Robertshaw Thermostat Company"*

Robert P. Patterson
Under Sec'y of War

Years of precision skill put into the manufacture of Robertshaw Thermostats now has its greatest reward. Quoted above, are the words of Under Secretary of War Patterson, in awarding Robertshaw the Army-Navy Production E for "high achievement in the production of war equipment." Wrote Mr. Patterson to John A. Robertshaw, President of Robertshaw Thermostat Company:

"The patriotism which you and your employees have shown by your remarkable production record is helping our country along the road to victory. The Army and Navy are proud of the achievement of the men and women of the Robertshaw Thermostat Company. May I extend to the Robertshaw Thermostat Company congratulations for accomplishing more than seemed reasonable or possible a year ago."

Men and women of Robertshaw who have made this possible
... your company salutes you!

ROBERTSHAW THERMOSTAT COMPANY

area should be larger. One vaporizer was built to handle more than 300 gals. of liquid per hour. A tank 24 in. in diameter and 5 ft. long was built with a head on each end and containing 60 pieces of 1/2-in. black pipe. The hot water is run through the pipes and butane through the tank around the outside of the pipes.

It requires approximately 800 B.t.u. to vaporize 1 gal. butane per hour. In the case mentioned above 240,000 B.t.u. are required per hour to heat water to the required temperature, plus about 30% loss of efficiency in the water system. Exhaust gas or hot air may be used

but the temperature should be 250° or higher because the rate of heat exchange between a gas and a liquid is much slower than between two liquids.

Two 1-in. liquid regulators were installed coming from the storage tank to vaporizer. An automatic liquid anti-flood valve shuts off supply in case the system should be shut down or regulators should fail. An 80-lb. pressure relief valve is located near the top of the vaporizer, as well as a pressure gage.

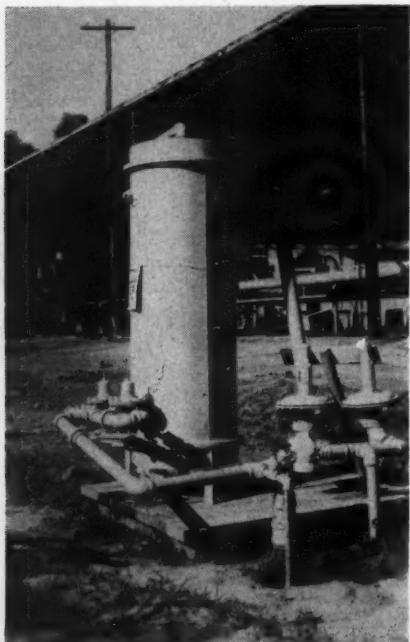
Regulators to Prevent Freezing

Two 2-in. vapor regulators were installed on the branching outlet of the vaporizer as close to the tank as convenient to prevent freezing of pipe between regulators and tank.

Liquid regulators are set at 15 lbs. pressure and the vapor regulators at 12 lbs. to supply the line running into the plant. These pressures could, of course, be about 5 or 10 lbs. higher during the summer but in winter there would be danger of vapor turning back to liquid on cold days.

On the vaporizer, shut-off valves can be included on each side of regulators so that if one regulator gives trouble it can be removed while the other is placed in operation.

Plants interested in making similar installations should check with the National Board of Fire Underwriters, insurance companies, and State laws before going ahead with actual installations, since certain safety rules which must be complied with differ in various States.



Welded vaporizer unit, built on the grounds, showing plant in process of construction.

BANKS TANKS DOMINATE

STOCK TAKING

An Editorial By W. W. Banks



The editorial by Chas. O. Russell entitled, "Mark Time—March," in the September issue of the Butane-Propane News made a profound impression in my mind. Mr. Russell spoke like a good soldier, and best of all, like a good American. This article prompted me to make a mental inventory, or perhaps more appropriately, a review of what the Butane industry has accomplished in a comparatively brief period of time. In truth, we can feel justly proud of our industry which is accomplishing

so much . . . which is contributing its full share to the war effort and to the betterment of living. A glance through any issue of our trade magazines reveals headlines like these: "Blood plasma dried and sealed with Propane for war needs" . . . "Butane cooks 900 meals daily at Cherokee female seminary" . . . "More synthetic rubber from natural gasoline". These are just a few headlines chosen at random, but they adequately indicate the signs of the times. Yes, we have made progress and are making progress at an unprecedented rate of speed. That these are sober times none can doubt and we believe in tempering our optimism with stark realism. Not-with-standing, we do envisage a broad horizon for our industry, beyond our immediate grasp, yes, but within reach of a not too far distant day.

- One way you and I can help our national government NOW is by purchasing all the War Bonds we possibly can . . . let's do it!

W.W.B.

**DALLAS TANK
AND
WELDING COMPANY, INC.
201-5 W. COMMERCE ST. DALLAS, TEXAS**



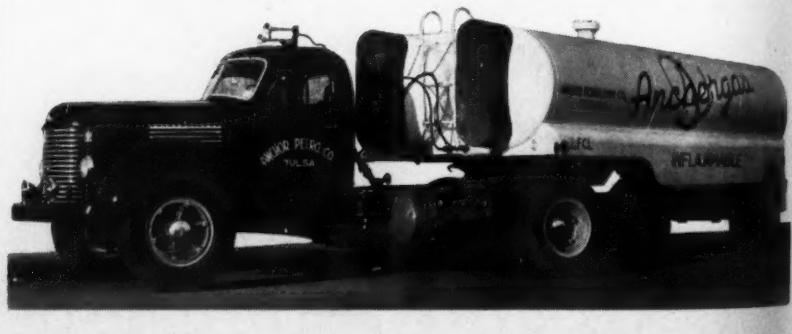
One of the new Anchor cars recently placed in service.

Anchorgas

BUTANE AND PROPANE

To better serve our customers and to aid our important war effort Anchor is adding to its transportation facilities.

ANCHOR PETROLEUM CO.
ATLAS LIFE BLDG., TULSA, OKLAHOMA



RESEARCH

EACH MONTH a competent staff reviews more than 70 publications serving the oil, gas and affiliated industries in a search for those published articles of value to technicians and executives in the liquefied petroleum gas industry. In this department of BUTANE-PROPANE News, brief abstracts of such articles are presented.—Editor.

Liquid-Liquid Extraction Data—D. F. Othmer and P. E. Tobias. *Industrial and Engineering Chemistry*, June, 1942, pp. 690-692. Following the methods of the previous paper (*Industrial and Engineering Chemistry*, p. 1240, 1941), data were obtained and are presented for ternary systems involving acetaldehyde, water, and several solvents which have more or less utility in extraction and separation of aqueous acetaldehyde solutions. A graphical method for readily applying the lever rule is developed, which reduces the time required and increases the accuracy of the application of the synthetic method of determining tie lines.

Liquid-Liquid Extraction Data—Tie Line Correlation—D. F. Othmer and P. E. Tobias. *Industrial and Engineering Chemistry*, June, 1942, pp. 693-696. Ternary solubility data from several sources, as used in extraction calculations and design, have been plotted using a new and improved tie line plot. A straight line results from a plot of $\log (1 - a_1)/a_1$ against $\log (1 - b_2)/b_2$ where a_1 is the fraction of solvent in the solvent phase and b_2 is the fraction of diluent in the diluent or other phase. This plot and the corresponding equation derived from theoretical reasoning are shown

to apply even to those systems in which there is considerable miscibility of the solvent and diluent phases; and by means of this convenient and accurate tie line plot, only two experimentally determined points are required to establish the entire tie line or distribution curve. Only one set of coordinates is necessary for all systems. A simple nomograph or graphical construction on the log plot itself may be used to plot composition data without calculation and then to determine directly the value of the major component of each conjugate phase. From the ternary solubility diagram the values of the other constituents then follow immediately.

Catalytic Polymerization of Olefins in the Presence of Phosphoric Acid—A. Farkas and L. Farkas. *Industrial Engineering Chemistry*, June, 1942, pp. 716-721. The polymerization of isobutene and other olefins was investigated on a phosphoric acid catalyst in which the hydrogen atoms were replaced by deuterium atoms. The polymerization proceeds rapidly even at room temperature and leads to polymers of deuterium content. Polymerization is accompanied by an exchange of hydrogen atoms between the catalyst and isobutene. Under similar conditions polymerization and exchange of n-butane are slower than the reactions of isobutene; and the reactions of propane and ethylene are still slower. No exchange of isobutene could be observed, while diisobutene polymer may undergo further exchange when brought into contact with the deuterated catalyst. The

mechanisms proposed by various authors for the polymerization are discussed, and a modified form of Ipatieff's mechanism is suggested. According to the latter, the catalyst and the olefin molecule can combine to two different forms, one of which results from the transfer of one hydrogen atom from the catalyst to the olefin, while the other is formed by the transfer of a hydrogen atom from the olefin to the catalyst. The polymer is formed by the interaction of these two forms. The suggested mechanism explains the experimental results of polymerization and exchange satisfactorily.

Expert Reconditioning Salvages Many Valves—J. C. Albright. *Oil Weekly*, June 8, 1942, pp. 17-20. Should gate, globe and plug valves be scrapped? Or should they be salvaged and repaired? A major oil company asserts that a valve should be salvaged and reconditioned when it has a current use value; that by repairing the fitting a greater contribution is made towards the total war effort than if the valve is scrapped. Author describes this company's method of reconditioning.

Selection of Internal Combustion Engines—E. N. Kemler. *Oil Weekly*, June 22, 1942, pp. 24, etc. Part 1. General considerations.

Selection of Internal Combustion Engines—E. N. Kemler. *Oil Weekly*, June 29, 1942, pp. 30, etc. Part 2. Horsepower performance curves.

Latest Type Piling Structure for Gulf Coast Marine Drilling—C. C. Pryor. *Petroleum Engineer*, June, 1942, pp. 27-30. Designed for uniform load distribution by employing improved method of bracing and scabbing piling.

Wide Variety of Chemicals Made from Refinery Gases—W. T. Ziegenhain. *Oil and Gas Journal*, June 25, 1942, pp. 185, etc. The young and rapidly growing petroleum-chemical industry is essentially one of a by-product. It has early associated itself with the Gulf Coast area because many of the nation's largest oil refineries are there. These plants are the sources of practically all the essential raw materials. As the new industry expands, it will undoubtedly follow oil refining although it could take into its plants the raw crude oil or the natural gases directly from wells or gasoline plants if operations were established on a large-enough scale. It is even conceivable that a huge chemical plant may be established to utilize crude oil or natural gas as charging stock and offer synthetic motor fuels and lubricants as two of its regular products. A list of some of the commercially important chemicals is given.

Rubber - from - Petroleum Chart. *National Petroleum News*, June 10, 1942, pp. R190, 191. In this article are shown in simplified graph form the steps in the preparation of vulcanizable synthetic rubber from natural gas and refinery gases, and also from non-petroleum sources, principally farm products converted first into alcohol and then into butadiene. The ethyl alcohol can also be recovered from petroleum, at less cost than from potatoes or grain or other farm products, authorities state. Charts prepared by Standard Oil Co. of N.J.

Guarding Against the Flammable Liquid Fire Hazard—C. L. Griffin. *Industrial and Engineering Chemistry*, June, 1942, pp. 664-669. This article describes the uses of carbon dioxide in extinguishing flammable liquid fires.

Let's wear this



For those
wearing this



When Johnny comes marching home again, he's going to be in the market for a lot of things—including the Gas Range of the Future.

It will be a CALORIC range! Even though Caloric's entire plant is now producing for

our government, Caloric research continues.

Our engineers and designers have put on their thinking caps, working on plans for this Range of the Future. We welcome the suggestions of Caloric dealers in this project.

*Will you put on your
Thinking Cap?*

**CALORIC GAS STOVE WORKS
PHILADELPHIA, PA.**



Reasonable Advertising Allowances Permitted Holders of War Contracts

THE Procurement Policy Division of the War Production Board last month clarified for the Association of National Advertisers the status of advertising as an allowable item of cost in government negotiated contracts. The Division has issued instructions to guide Price Adjustment Boards in determining such allowable advertising costs.

Under these rules the holders of a cost-plus-fixed-fee contract will be allowed "reasonable expenditures" for industrial or institutional advertising, which properly can be classified as an operating expense incurred for reasons of policy. Definition of "reasonable expenditure" will be substantially the same as that announced by the Secretary of the Treasury. A contractor who is in doubt as to the admissibility of his advertising expense should take the question up with the contracting agency dealt with.

Regular Advertisers Rate Highest

Advertisers who have been *advertising right along* will probably have little difficulty in continuing an established policy. Procurement officers are given to scrutiny of advertising content, and it is certain that *advertising of value to the company* will stand a much better chance of being allowed.

Two difficulties have been (1) that most industry executives who negotiate government contracts know little about advertising and do not try to have advertising expense included as a cost; (2) most advertising men do not know whether their companies are operating on a cost-plus-fixed-fee or fixed-price contract.

The difference in type of contract is important.

When a fixed-price contract is being negotiated, field procurement officers frequently request a breakdown of costs. In such cases, manufacturers should include advertising expenditures in overhead rather than as a separate cost item, since it is often not practical to determine exactly what part of advertising expenditures should be charged against a particular contract.

Donald M. Nelson, head of the war production board, pointed out that no set formula can be devised to govern all cases and that the "rule of reason" must apply to each particular case. WPB, he said, does not wish to set up arbitrary rules which might work undue hardship on manufacturers converted to war work who desire to preserve their trade mark and goodwill.

In conclusion, advertisers might be warned against paying too much attention to the so-called "green book." This booklet, "Explanation of Principles for Determination of Costs Under Government Contracts," was written last spring by two former WPB employes as their interpretation of Treasury Decision 5000 which has been in existence since 1934 and has been written into many Government cost-plus contracts. Although TD 5000 does not mention advertising, the authors of the "green book" ruled that generally advertising is an inadmissible item of cost on the reasoning that advertising is not required to do business with the Government.

WAR-TIME* HELP FOR YOUR* BUSINESS!

**REGULATORS
AVAILABLE FOR
PROMPT SHIPMENT!**

Fisher Governor Company can still supply you with standard types of L.P.G. Regulators, regulator assemblies and accessories, when your orders for this equipment carry proper certification, manually signed, in accordance with General Limitations Order No. L-86. Our stock of L.P.G. regulators and accessories were manufactured and assembled before the issuance of Order L-86 and we believe, will take care of your limited requirements for the "duration".

**COMPLETE
RECONDITIONING
SERVICE! . . .**

Send your old regulators to us. We will replace worn or broken parts, test for leaks and pressure setting, and send them back to you as good as new.

**NEW SERVICE
MANUAL! . . .**

Designed to completely serve your maintenance needs. Contains sectional drawings, parts lists, instructions, parts prices for all Fisher L.P.G. Regulators. Send for your copy today.

FISHER GOVERNOR COMPANY

942 Fisher Building • MARSHALLTOWN, IOWA

NOVEMBER - 1942

New Materials for Appliances May Come With War's End

A DVICE to gas appliance manufacturers to be prepared to meet post-war competition of an entirely new and unique character was given Oct. 6 by John A. Robertshaw, following his re-election as chairman of the Manufacturers' Section of the American Gas Association.

The wartime development of plastics, glass, and new metals introduces new basic materials which, Mr. Robertshaw said, show every promise of being adaptable to gas appliance manufacture.



John A. Robertshaw

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"These materials," Mr. Robertshaw pointed out, "offer opportunity for new design in stoves, water heaters, and cooking appliances of all kinds. This can be so revolutionary in character as to make much of the present type appliances obsolete both as to construction and performance. Although gas appliance plants are now almost wholly converted to war work, there is vital necessity for the industry to continue research work and be alert to the far-reaching changes which are bound to be a post-war development.

"For example, the kitchens of the future may be equipped with molded plastic, glass or new light metal stoves and similar appliances with a beautiful and practically indestructible finish. The industry would benefit by solving many shipping and

handling problems, including savings in weight and avoidance of breakage.

"Only by keeping abreast of rapidly changing times and conditions can the gas appliance industry maintain a position of leadership in the home appliance field."

Mr. Robertshaw is president of the Robertshaw Thermostat Company, Youngwood, Pa., which has just been awarded the Army-Navy E for high achievement in production of war equipment. The Robertshaw plant, 95% converted to manufacture of precision parts for munitions, illustrates how far the manufacture of gas appliances has been immobilized.



Brunner Manufacturing Co. Converts Plant to War Work

The plant of the Brunner Manufacturing Co. at Utica, N. Y., has been given over to full production of war materials, according to a recent announcement of special interest to dealers and users of Brunner air compressors and refrigeration equipment.

Parts for maintenance of all equipment now operating in the field will still be available.



Wm. E. Clow Passes Away

William E. Clow of Lake Forest, Ill., founder and chairman of the board of James B. Clow and Sons, manufacturers of gas heating equipment, died Sept. 14 at the age of 82.

The firm was founded by Mr. Clow in 1878 as a plumbing and water works supplies concern shortly after he went to Chicago from Pittsburgh, his birthplace.

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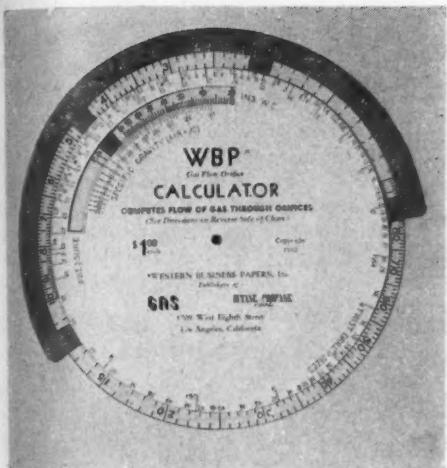
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Address

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NEW GAS FLOW ORIFICE CALCULATOR

Invaluable to LP-Gas Engineers, Shop Men, Domestic Appliance Service Departments, LP-Gas Appliance Manufacturers, and All Others Who Need to Check or Determine LP-Gas Orifice Sizes.

- Easy to Use and Carry
- No Need for Calculations

Ever had to convert an appliance from manufactured or natural gas to LP-Gas and needed to know what orifice size to install? Ever had to estimate how much gas a burner could handle? Ever had to convert B.t.u. per hr. to cu. ft. per hr., or vice-versa? Ever had to know the B.t.u. input load of an appliance or industrial burner? With the Gas Flow Orifice Calculator you can quickly and accurately work out all these and many other problems.

Checks all factors relative to orifice sizing for gasses from 300 B.t.u. to 3300 B.t.u. at pressures from .5-ins. to

- No Reference to Tables
- Just Set Scales and Read

15-ins. water pressure. Determines the flow of orifices from sizes 1 to 75 number drills, from sizes A to Z in letter drills, and from sizes 2/64 to 32/64 in fraction drills.

Priced for quantity purchase to enable you to obtain a sufficient number for everyone in your organization concerned with orifice sizing. Privilege to return within 10 days, for any reason, further assures your satisfaction. We pay postage on orders accompanied by remittance. Add 3% sales tax on California orders; 10% excise tax on Canadian orders.

ORDER TODAY . . .

BUTANE-PROPANE News, Publishers
1709 West Eighth Street, Los Angeles, Calif.

SPECIAL OFFER
25% DISCOUNT ON
ALL ORDERS OF 25
OR MORE. **\$1.00**
EACH

Gentlemen: Please send me W.B.P. Gas Flow Orifice Calculators for which I am enclosing my check (or money order) for \$

Name Position

Company

Address City and State

Butane Gas Sales Co. Moves to New Location

Butane Gas Sales Co., a division of Southwest Stove & Supply Co., of Dallas, Texas, has established headquarters at 327 West Commerce St. where the company has purchased a Magnolia service station. The service station will be operated in conjunction with the butane business.

The offices, warehouse and bulk storage of the company will be located at the new address. A 3000-gal. storage tank is to be erected at the location. W. E. Russey is owner of the business.

◆ ◆

Rudd Manufacturing Co. Elects New Directors

At the annual meeting of the stockholders of the Rudd Manufacturing Co., Pittsburgh, held Sept. 21, the

following directors were elected for the ensuing year: A. P. Brill, W. R. Daley, John T. Duff, Jr., E. J. Horton, H. S. Humphrey, R. H. Lewis and John H. Sorg.

When this newly elected board of directors held a meeting on Sept. 29 all officers were reelected with the exception that R. H. Lewis was chosen vice president to succeed H. S. Humphrey, who resigned last June.

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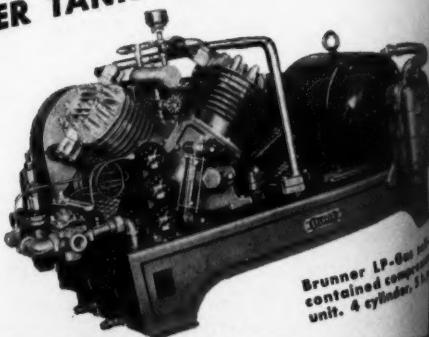
Seth W. Herndon Will Be District No. 2 Director

Ralph K. Davies, Office of Petroleum Coordinator, has appointed Seth W. Herndon, of Tulsa, Okla., to the position of director of natural gas and gasoline for District No. 2.

Mr. Herndon's headquarters will be at 120 So. La Salle St., Chicago.

ARE YOU LOSING 500 to 1000 lbs. LP-Gas Vapors PER TANK CAR UNLOADED?

Many LP-Gas operators are losing 500 to 1000 lbs. of liquid petroleum gas because they can't recover all the gas vapors in tank car unloading. You can get these additional vapors by using the Brunner LP-Gas compressor unit. These vapor savings will quickly pay for the Brunner unit. Besides, the Brunner compressor will reduce the time required for unloading and speed up bottle filling by as much as 25%. Brunner Manufacturing Company, Utica, New York, U. S. A.



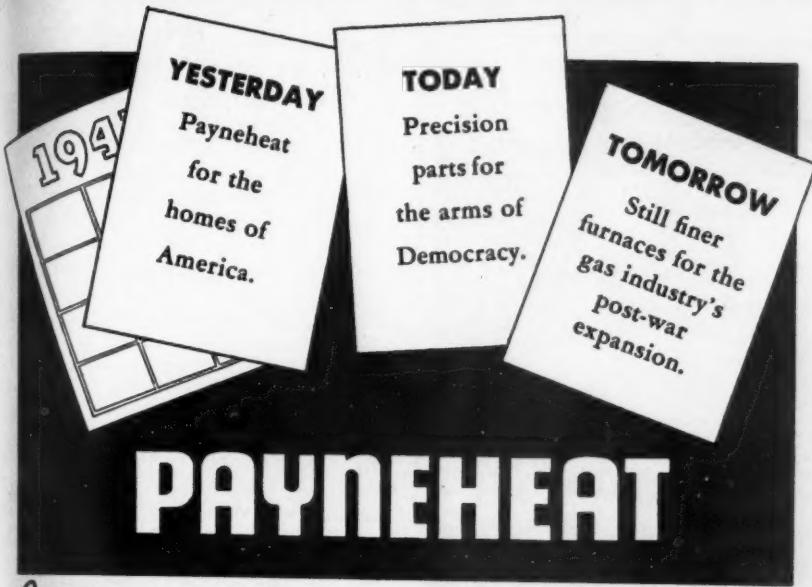
Brunner LP-Gas
unit. 4 cylinder, 3.5
hp.

Write for FREE Booklet

The new booklet describes the Brunner LP-Gas Unit, contains illustrations, diagrams and other pertinent facts on handling liquid petroleum gas.



NOV



Payne FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIFORNIA

*... and the next one
will be even better!*

* We're mighty proud of this LP TAPPAN! But between it and the next one, we're using all of our facilities for Uncle Sam. Meanwhile—skilled men are constantly developing new improvements for that next TAPPAN . . . a TAPPAN with a host of "extra" conveniences . . . with more famous TAPPAN "firsts" . . . with that specialized engineering that boosts liquefied gas sales and customer satisfaction sky high!

AND MEANWHILE—REMEMBER THE GOOD OLD TAPPAN DAYS! Keep up your TAPPAN files . . . remember the abundant TAPPAN sales helps. Use your service manual! Let's keep 'em cooking!

The Tappan Stove Co., Mansfield, O.

TAPPAN
Gas Ranges



Superior LP-GAS CYLINDER VALVES



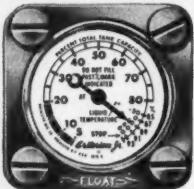
Listed as
Standard
and for
Re-examination Service
By
Underwriters'
Laboratories



Write for
Bulletin LP-8
For details on

cylinder valves; and valves and accessories
for bulk stations; above and below ground
installations.

SUPERIOR VALVE & FITTINGS CO
1509 WEST LIBERTY AVENUE
PITTSBURGH, PENNSYLVANIA



LONG WILL THEY SERVE!

... that's because Rochester Gauges are carefully designed and durably built to serve with greater accuracy and dependability throughout the present emergency.

ROCHESTER MFG. CO., INC.
17 Rockwood St., Rochester, N. Y.

ROCHESTER
Criterion GAUGES

Pacific Coast LPGA Meetings Start Oct. 26

The series of fall meetings of the Pacific Coast Section of the LPGA opens Oct. 26 in Los Angeles under the direction of Harry I. Horn, vice chairman for the Southern California-Arizona district.

The morning session will be devoted to LP-Gas supply and transportation problems related thereto, discussed by Pacific Coast Chairman W. T. Joplin and Charles E. McCartney. The afternoon session will be addressed by Frank R. Fetherston, secretary of the National LPGA, who is visiting the Pacific Coast specially to attend the fall meetings.

From Los Angeles, speakers and officials will travel to Fresno, Calif., for a sectional meeting there on Oct. 28; then to a San Francisco meeting on Oct. 30, and finally to a Portland, Ore., meeting at the Multnomah, Nov. 4.



New Industry Questionnaires

The new industry questionnaires that the War Production Board has planned for some time to send to LP-Gas dealers and distributors was mailed from Washington the middle of October.

Members receiving this form are required to return it, completely filled out, within 10 days. It asks for a complete statement of equipment inventory as of Sept. 1, including the amount of equipment on hand and being served on consumers' premises.



Commercial Cooking Equipment Controlled by Order L-182

Non-electric cooking equipment used in restaurants, hotels, cafeterias, etc., was put under strict production and distribution control Oct. 1 by the War Production Board. The order number is L-182.

BUTANE-PROPANE News



Entirely Rewritten

Handbook BUTANE-PROPANE GASES

481 Pages of Up-to-Date LP-Gas Information, Charts, Diagrams and Photographs

\$5.00

CHECK THE NEW CONTENTS

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Chapter 2: The ABC of LP-Gas, an Introduction to LP-Gas Operations.

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- Chapter 1: Installing and Servicing LP-Gas Systems.
Chapter 2: Semi-Bulk Systems.
Chapter 3: Bottled Gas Systems.

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- Chapter 4: Gas Utility Service From Central Plants.
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CATALOGUE SECTION

A comprehensive presentation of LP-Gas appliances and equipment by the manufacturers of the LP-Gas industry's best known products.

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BUTANE-PROPANE
News

1709 W. 8th St. Los Angeles, Calif.

CNGA Will Hold Fall Meeting At Biltmore Hotel, Nov. 6

Limited to an afternoon session at which three important papers will be presented, and an evening session which will feature the association's annual banquet and entertainment program, the 17th Annual Fall Technical Meeting of California Natural Gasoline Association will be held in the Biltmore hotel, Los Angeles, Nov. 6. This is the joint announcement of W. W. Robinson, Jr., president, D. E. McFaddin and Ben C. Dumm, chairmen respectively of the Fall Meeting and Entertainment Committees. However, the association's Technical Committee, chairmaned by J. B. Taylor, will meet in an open session during the morning, starting at 10 o'clock.

Registration of members and guests will start at 12 noon and continue up to 2 P.M. The first speaker will be Wright W. Gary, president Filtrol Corporation, and recently director of the Refining Division of the Office of Petroleum Coordinator, who will present a discussion titled "The Role of the Natural Gasoline Industry in the Nation's War Effort."

The second paper titled "Steel Allocation Problems in the Oil Industry" will be given by Alexander Macdonald, Deputy Regional Director, War Production Board.

The final paper of the meeting will be presented by Dr. Hooper Linford, research chemist, Union Oil Co. of Calif., whose subject will be "Chemical Utilization by Oxidation of Natural Gas and Natural Gasoline Hydro-



W. W. Robinson, Jr.

carbons." Following Dr. Linford's paper, the floor will be opened for discussion.

At 7 o'clock members of the Association and their guests will gather for the banquet in the Biltmore Hotel ballroom which will be followed, as usual, by an entertainment program.

The Fall Meeting is open to members and all interested parties. Those desiring additional information or banquet reservations are advised to communicate with George L. Tyler, secretary, California Natural Gasoline Association, 510 West 6th Street, Los Angeles.

◆ ◆

Oklahoma Automatic Gas Co. Purchases F. B. Dukes' Concern

The Oklahoma Automatic Gas Co., 16 West California, Oklahoma City, Okla., recently purchased the LP-Gas business of F. B. Dukes of Bethany, Okla.

Mr. Dukes was killed late in August, in an automobile accident near Chickasha, Okla. L. H. Hughes, manager of the Oklahoma Automatic Gas Co., stated that his company purchased an 1140-gal. twin-tank butane truck from the Dukes estate. The transaction also included routes operated by Mr. Dukes out of Anadarko, Mountain View, Carnegie, Hobart and Bethany, all in Oklahoma.

◆ ◆

W. Walter Timmis Resigns From War Production Board

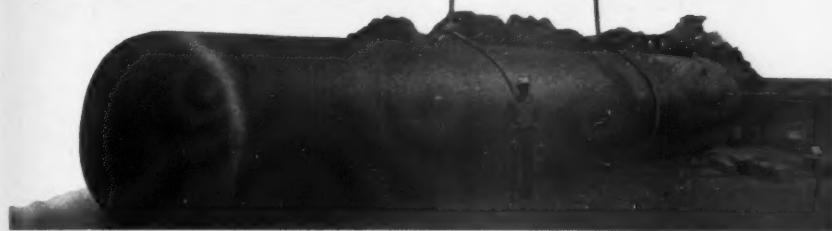
Resignation of W. Walter Timmis as chief of the WPB plumbing and heating branch was announced Sept. 17 by A. I. Henderson, deputy director general for industry operations. Mr. Timmis resigned to join the armed services.

Ronald Allwork, New York City, who recently had been appointed deputy chief of the branch, was named acting chief by Mr. Henderson.

SPECIALISTS in design and fabrication of PROPANE TANKS—

• DOWNINGTOWN IRON WORKS
DOWNINGTOWN, PA.
WELDED and RIVETED PRODUCTS

REMEMBER . . . it is important for your fabricator of tanks for propane storage to have special knowledge of the problems involved . . . for, not only does safety depend upon his specifications for materials and choice of procedure in handling them . . . but, in addition, extensive propane experience, such as Downingtown's can be a time-saving, money-saving asset!



PROOF . . . your customers' urns can last for the duration

Manufacturers and Distributors

GREENE WINIKLER COMPANY

The Providence Hospital, Seattle, Washington, has a "Blickman" Navy Standard 40-gallon Copper Urn, Type A, which apparently means that it was manufactured in the year 1918 . . . This urn is in excellent condition, and being used constantly every day.

Blickman urn giving excellent service after 24 years of constant use

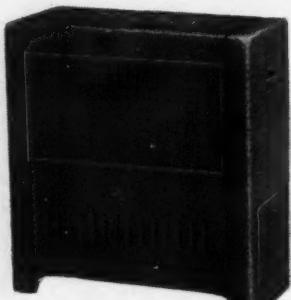
Modern Blickman urn battery—built to last



THIS LETTER from one of our distributors is interesting proof of what proper care will do in conserving urn equipment. Blickman urns are noted for their excellent construction and durability. However, the best of urns must be properly cared for. You will gain your customers' appreciation by reminding them of these simple precautions:—To prolong life and serviceability of equipment, make periodic check-ups. Be sure that urns are cleaned regularly and that the water supply in jacket and boiler is kept at a safe minimum level. Don't obstruct safety and vacuum valves.

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DIRECT TO YOUR BULK
STORAGE PLANT.

the
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Company

• BROWNSVILLE, TEXAS

WHOLESALE TRANSPORTERS—DISTRIBUTORS OF BUTANE

ANSWERS

To Chapter 15 The Bottled Gas Manual

Here are the answers to the questions on Page 34 and which refer to problems in Chapter 15 of THE BOTTLED GAS MANUAL:

1. A. Non-automatic.
B. Semi-automatic.
C. Full automatic.
2. Non-automatic water heaters.
3. A clock with a spring actuated mechanism to shut off a gas cock.
4. To stop reverse circulation of the water and consequent loss of heat when the gas burner is not in operation.
5. A. A pressure relief valve.
B. A temperature relief valve.
6. Slow recovery—2500 to 10,000 B.t.u.
Medium slow recovery 10,001 to 15,000 B.t.u.
Medium fast recovery 15,001 to 20,000 B.t.u.
Fast recovery 20,001 B.t.u. and over.
7. 80° temperature rise.
8. That the heat rises in each column when the burner is not in operation, thereby producing a condition of equilibrium.
9. To raise 30 gals. of water 80°, $30 \times 8\frac{1}{3} \times 80 = 20,000$ B.t.u. are required. The actual input is 30,000; therefore, the efficiency is $20,000 / 30,000 = 66\frac{2}{3}\%$ efficient.
10. A. It must furnish all the

BUTANE-PROPANE News

For a More DEPENDABLE SOURCE of SUPPLY . . .

. . . of Higher Quality Butane and Propane—for a Stable and More Uniform Product—assuring the utmost in satisfaction and efficient, trouble-free service—try Carter Better Products.

For complete information concerning Carter's dependable service write: The Carter Oil Company, Marketing Department, Room 928 National Bank of Tulsa Building, Tulsa, Okla.

DEHYDRATED *Propane and Butane* THE CARTER OIL COMPANY

TULSA, OKLAHOMA

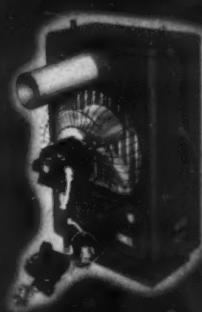
Shipping Points: Seminole, Okla., Stonewall, Okla., St. Elmo, Ill.

WHOLESALE ONLY!

REZNOR Gas Unit Heaters

NOW AVAILABLE For War Production Factories

• Restrictions on the manufacturing of Reznor Gas Unit Heaters have been removed by W.P.B. This action will not make heaters available to anyone other than armed forces and industries with high priority ratings. Thus, war factories may be provided with a system which saves 89% in vital materials. Reznor equipment also requires less installation time, and it economically moves more warm air over wider areas. Write today. REZNOR MFG. CO., Mercer, Penna.



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Order These Famous L. P. Gas Products From Us . . .



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GAS EQUIPMENT SUPPLY CO.



L.C. RONEY, INC.

meets the demands of the nation. Our plant has gone to war for the duration—but when peace comes, L. C. RONEY products for the LP-Gas industry will meet the demands of dealers everywhere. In the meantime—our stock of LP-Gas equipment is still complete.

L.C. RONEY INC.

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hot water we want when we want it.

- B. It must do this economically.
- C. It must function with complete safety and freedom from trouble.



Chemical Resistant Plastic Made by Hodgman Rubber Co.

One of the outstanding characteristics claimed for the new thermoplastic "Saran" tubing and fittings, manufactured by the Hodgman Rubber Co., Farmingham, Mass., is their ability to resist chemicals and solvents at room temperature. The tubing is specifically designed to replace such valuable war materials as aluminum, stainless steel, nickel, copper, brass, tin and rubber.

Its insulating qualities, flexibility, and ease of handling make "Saran" products desirable in installations requiring the transport of oil, gas, air, water and corrosive chemicals. A feature of this tubing's chemical resistance is that many combinations of corrosive agents and solvents, each of which formerly required individual handling, may now be satisfactorily transported together, through Saran.

The basic material for Saran tubing is made by Dow Chemical Co., of Midland, Mich.



OPA Fixes Ceiling Prices On Used Gas Cylinders

Ceiling prices for used steel high pressure gas cylinders needed for the army and navy can be no greater than the same level fixed for new cylinders, according to an order of the OPA issued Oct. 8.

The OPA stated that its action was necessary because of an inflationary situation brought about by the inability of manufacturers to meet demands for new cylinders.

WPB Tightens Control Over Gas Cylinders

Control over production and distribution of gas cylinders was ordered Sept. 30 by the War Production Board with issuance of General Preference Order M-233.

The order provides that until Jan. 1, 1943, production and delivery of the cylinders and cylinder forgings will be subject to such directions as may be issued by the Director General for Operations.

After Jan. 1, production and delivery of the cylinders will be permitted only as specifically directed by WPB.

Producers are also required to submit on the 25th of each month, beginning October 25th, production and delivery schedules for the third following calendar month, on Form PD-662.

Gas cylinders are now used almost entirely by the armed forces.



Surplus Inventory Will Cover Servel Refrigerator Parts

Some of the inventories of usable Servel Electrolux household refrigerator service parts now in the hands of distributors may be in excess of the quantities needed to maintain adequate service. If these surpluses were made available to other distributors needing such parts, the use of critical materials at the factory for fabricating these parts would be reduced and the material thereby conserved. For this reason, Servel, Inc. will act as a clearing house for the purpose of moving inventory surpluses between distributors or from distributors to the factory, according to a company announcement.

There may also be in your inventory, inoperative controls. The use of some of these parts might help to conserve factory inventories. There-

fore, report them, in triplicate, on "Inventory of Inoperative Servel Electrolux Controls," form SVN-683, which can be had from Servel.



New PCGA Officers Identified With LP-Gas Industry

At the 49th annual meeting of the Pacific Coast Gas Association in San Francisco on Sept. 4, F. M. Banks, vice president of the Southern California Gas Co., Los Angeles, was elected president for the ensuing term, and E. L. Payne, vice president and general manager of the Payne Furnace and Supply Co., Inc., Beverly Hills, Calif., was named vice president.

Departments of firms of both officials are identified with the liquefied petroleum gas industry.



Managers for Western Offices Named by Bailey Meter Co.

Bailey Meter Co., Cleveland, Ohio, has announced the appointment of L. F. Richardson as branch manager of its newly established Los Angeles office and H. T. Sawyer as branch manager of its new office in Seattle. Both had previously been located in Los Angeles and Seattle but had functioned as representatives of the San Francisco branch.

V. A. Rumble, manager of the company's San Francisco branch, remains West Coast supervisor.



Gas Institute Names New Technical Director

Dr. Frederick W. Sullivan, Jr., research chemist, has been appointed technical director of the Institute of Gas Technology, Chicago.

The Gas Institute, founded Sept. 1, 1941, is planning an expansion of its program both in research and educational work for the entire gas industry.

LP-Gas Production Decreased But Demand Expanded in July

The production of liquefied petroleum gas at natural gasoline and cycle plants in the United States decreased slightly in July, as compared to June, according to the Bureau of Mines report. The respective figures

were 50,610,000 gals. and 50,946,000 gals.

Isobutane production for July, however, was 588,000 gals. greater than in June.

Liquefied petroleum gas sold to jobbers and retail outlets in July totaled 43,932,000 gals., compared to 43,386,000 gals. in June.



Priorities Eased On Defense Projects

Installation of utility facilities using critical materials in defense-rated projects will be expedited under terms of an amendment to P-46 announced Sept. 14 by the War Production Board. Order P-46 covers maintenance, repair and supplies for utilities.

The amendment provides that suppliers of utility services to projects rated A-5 or better which require iron, steel or copper for their construction will be granted the highest rating assigned to other equipment for the project which also uses iron, steel or copper.

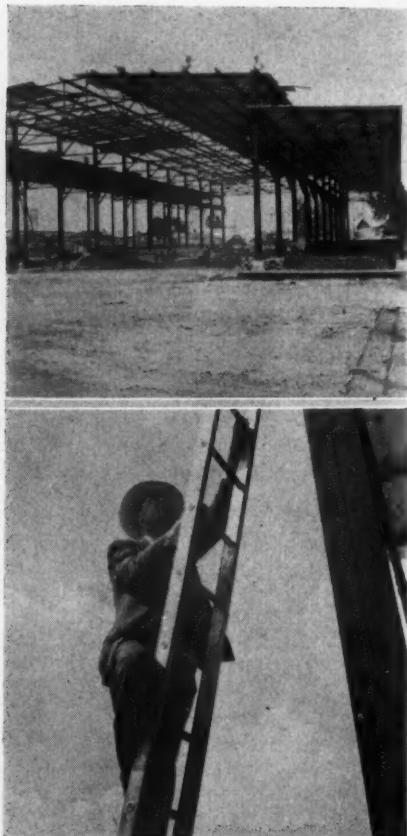
All other required utility facilities will be assigned the lowest rating granted to materials for the project so long as the rating is not below A-1.



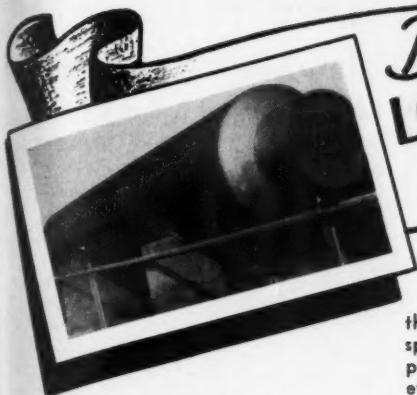
Bastian-Blessing Co. Exhibits At National Metal Exposition

The Bastian-Blessing Co., Chicago, exhibited its Rego products at the National Metal Exposition in Cleveland Oct. 12-16.

The products exhibited included manifolds, manifold parts, valves and regulating equipment for controlling and handling high pressure gases such as, oxygen, acetylene, hydrogen, nitrogen, CO₂, etc. Rego welding and cutting equipment were included in the exhibit along with some of the special items which the Bastian-Blessing Co. is manufacturing for the war program.



Upper: Skeleton frame of the new plant being constructed by Dallas Tank & Welding Co., Dallas, Texas., which will engage in war production 100%. Lower: W. W. Banks, president of the company, climbing up the steel side of building for overall view of the project.



Built to Give LONGER, BETTER SERVICE

American Butane and Propane Tanks—the best that more than thirty years of specialized manufacturing experience can produce—assure maximum safety, highest efficiency and long, dependable service.

You will find that our recommendations are right from every standpoint of design—materials—construction—workmanship—and price. Consult us about your special storage problems—there's no obligation.

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Manufacturers and Distributors
ALHAMBRA CALIFORNIA

Our ABC for VICTORY! Assured Blodgett Cooperation

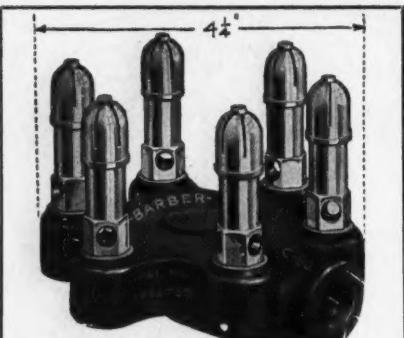
War Department orders currently require 100% of our production capacity.

And so, to present Blodgett Oven owners, we pledge our full cooperation to "Keep 'Em Cooking" until such time as we can again meet your requirements for new ovens.

Send us the number or numbers of your customers' Blodgett equipment. We will promptly send you a sheet listing all repair parts, an instruction card and operating instructions.

THE G. S. BLODGETT CO., INC.
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No. C-60 Barber Burner

BARBER APPLIANCE BURNERS

Barber is now working on war production, but wherever possible and permitted, we are still supplying the regular trade. Barber Units, in many standard or special shapes and sizes, are always correctly designed to fit the individual appliance, and give complete combustion on Butane-Propane or any other gas. Now that efficiency is more vital than ever—submit your burner problems to us. Complete catalog on request.

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SPRAGUE METERS

for

PROPANE - BUTANE SERVICE

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SPRAGUE METER COMPANY

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Los Angeles, Calif.

San Francisco, Calif.

Dealers Organize In Dallas, Texas

A number of Dallas, Texas, butane dealers have formed an organization known as Dallas Butane Dealers' Association, naming W. E. Russey, of Butane Gas Sales Co., Division of Southwest Stove and Supply Co., as



James E. O. White, president, and W. E. Russey, secretary-treasurer, of Dallas Butane Dealers Association, recently organized.

president. James E. O. White, Dallas Butane Gas Appliance Co., was named secretary-treasurer. Among the functions the organization will perform for its members is that of a credit clearing house.

Osher Goldsmith of the Office Production Management, of Dallas, addressed a dinner meeting of the group held Sept. 15. The subject under discussion was Price Schedule No. 88. Twenty dealers attended the meeting.

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USE PITCO

Frialators

REG. U.S. PAT. OFFICE

SAVE FAT . . . GAS . . . SPACE

Deep-Fat Frying at Its Best

★ Customers can serve a wider variety of fried foods.

★ Left-overs or by-products quickly converted into daily specials.

★ Increase in customer business means increase in the gas load.

★ Actual saving in fat alone more than pays total cost of gas required to operate them.

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INCORPORATED

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McNAMAR Tanks

- TRUCK TANKS
- TRANSPORTS
- SKID TANKS
- STORAGE TANKS
- UNDERGROUND SYSTEMS

All tanks ASME U-69, inspected by
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On the Warpath

FLORENCE has enlisted for the duration. To our Army and Navy the name Florence means increasing war production as thirty million dollars' worth of stove and heater production capacity serves America's growing war might.

To Mrs. America, Florence still means Better Looking, Better Cooking, Less Work. The Florence L-P Gas Ranges now in service will continue to create more good word-of-mouth advertising that will make your selling job easier when the war job is done.



After Victory will come new Florence L-P Gas Ranges. Into them will go all our pre-war skill plus all that the war production drive is teaching us today.

FLORENCE GAS RANGES

For L-P Gas

BACKED BY 70 YEARS' EXPERIENCE

FLORENCE STOVE COMPANY
Gardner, Mass.; Kankakee, Ill.; 1458-59
Merchandise Mart, Chicago; 45 E. 17th St.,
New York; 53 Alabama St., S.W., Atlanta;
301 N. Market Street, Dallas.

Oil Compact Commission Hears Talk on LP-Gas

When the Interstate Oil Compact Commission met in Chicago on Oct. 1-3 the session was welcomed by Governor Dwight H. Green, of Illinois, and Governor Payne Ratner, of Kansas, responded. The Commission,



Charles L. Orr and G. L. Brennan

composed of representatives of a dozen oil-producing states, is headed by Leon C. Phillips, governor of Oklahoma. Chas. L. Orr is secretary.

Harold L. Ickes, Secretary of Interior, Petroleum Co-ordinator for War, in addressing the fall session of the Commission, stated that special thanks was due the entire industry for the manner in which it has cooperated with his department, especially in view of large monetary losses to the industry. He believes that some governmental method should be adopted to compensate the industry for these losses.

Of special interest to the LP-Gas industry was the address of G. L. Brennan, manager LP-Gas Division, Warren Petroleum Corp., Tulsa, Okla.,

who spoke on "The Development of the Liquefied Petroleum Gas Industry."*

Other speakers to address the commission during its two day convention included Ralph E. Davis, consulting engineer, Pittsburgh; N. C. McGowen, president United Gas Pipeline Co.; Frederick W. Sullivan, director of Technical Research, Institute of Gas Technology, Chicago; Dr. Frank Dotterweich, Office Petroleum Coordinator for War, Washington, and Dr. Gustav Egloff, Director of Research, Universal Oil Products Co., Chicago.



Only One Delivery Per Day

An interpretation making it clear that only one delivery may be made on the same day by a truck operator to an apartment house or office building, was issued Oct. 7 by Jack Garrett Scott, General Counsel of the Office of Defense Transportation.

The fact that the operator may have material to deliver to different apartments or offices does not relieve him from compliance with General Order ODT No. 17, which specifically states: "No motor carrier when operating a motor truck shall make . . . (c) more than one delivery from any one point of origin to any one point of destination in one calendar day."



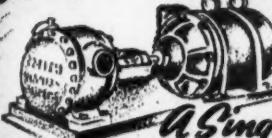
W. K. Bales, of Modern Appliance Co., Joins Army

W. K. Bales, formerly with Modern Appliance Co., Denver, Colo., now has a new employer, Uncle Sam.

Private Bales is making practical use of his former training and work for he is a refrigerator and LP-Gas man in the army.

* This paper will be published in the December issue of BUTANE-PROPANE News—BUTANE-PROPANE News

**1,000,000 GALLONS
A MONTH**



A Single
SMITH PUMP

last year handled over a million gallons a month without service.

Unusual—yes, but proof that SMITH Butane-Propane PUMPS meet the demands of LP-Gas transfer. SMITH PUMPS are precision built and designed for the job.

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35 MISSION ST. SOUTH PASADENA, CALIF.

*For Safety
and Economy*

**ETHYL
MERCAPTAN**

Purified

The ACCEPTED
standard
odorant
for liquefied
petroleum
gases.

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CHEMICAL WORKS**
ST. LOUIS NEW YORK

ARMY, NAVY, HOME, FACTORY



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**SINCLAIR
LP-GASES TODAY**

Dedicated to America's successful war effort, Sinclair plants, facilities and trained personnel are exerting every effort to produce the greatest quantity—the finest quality of petroleum products. This includes the famous Sinclair Butanes and Propane, so essential for a wide range of wartime, industrial and transportation uses.

But whether for industrial power, heat or light; for domestic use in the homes of defense workers, or as ingredients in the new products of American ingenuity and science, Sinclair and its distributors are happy to have a part in this vital business of supply.

*Protect your fuel requirements
by contracting with*

**SINCLAIR PRAIRIE
OIL COMPANY**

Liquefied Petroleum Gas Division
Sinclair Bldg. Tulsa, Okla.

**SAFETY TOPPED
WITH A
KEROTEST
PROPANE-BUTANE
CYLINDER VALVE**

Automatic spring safety vent releases *only* excess pressure.

Diaphragm packless construction assures long service—low maintenance. **WRITE for Catalog**

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HOT Water UNITED STATES

Automatic Water Heaters

Approved by A.G.A. for
Liquefied Petroleum Gas

United States Heater Co.
COMPTON, CALIFORNIA

NOW IN STOCK

- Butane Manifolds (Thickstun)
- Butane Mileage Meters
- Butane Tank Fittings
- Bu-Seal (Compound)
- Fisher Domestic Regulators
- Forster Burners and Torches
- Hackney I.C.C. Cylinders

"Pioneers of the Butane Industry"

**ELECTRIC & CARBURETOR
ENGINEERING CO.**
2323 E. 8th St. ° Los Angeles

Helen C. Wilke, Secretary, Pacific-Airmax, Passes Away

Mrs. Helen C. Wilke, secretary-treasurer of Pacific - Airmax Corp., Huntington Park, Calif., died Sept. 16. For more than 16 years Mrs. Wilke was employed in the accounting department of Pacific Gas Radiator Co., becoming secretary-treasurer of the company about three years ago. She retained this post in the Pacific-Airmax Corp., recently formed through the merger of Airmax Corp., San Diego, with Pacific Gas Radiator Co., Huntington Park.



HELEN C. WILKE

Weights and Measures Men Meet in Bakersfield, Calif.

The seventh annual conference of weights and measures officials of California met in Bakersfield, Calif., on Oct. 21-23. The meeting was conducted by President Oscar Melton, of Stockton, and Lloyd M. Sands, Kern county sealer, acted as host.

Due to war conditions, many current problems were treated by program speakers and discussed on the floor of the convention.

Cooperation in the meeting was extended by oil companies, meter pump and scale representatives.

New President of ASME Is Harold V. Coes

Harold V. Coes, vice president of Ford, Bacon & Davis, Inc., New York City, has been elected president of the American Society of Mechanical Engineers, it is announced by C. E. Davis, secretary of the organization.

For the **PERMANENT**
REPLACEMENT of
STRATEGIC MATERIALS

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RESISTANT TUBING
AND FITTINGS BY
HODGMAN

Saran Tubing by Hodgman is a unique product which has been developed to replace strategic materials such as aluminum, stainless steel, nickel, copper, tin and rubber. It is adaptable for use under pressure or at low temperatures and is resistant to most chemicals. Its insulating qualities, flexibility and ease of handling make it extremely valuable in installations requiring the use of oil, gas, water and corrosive chemicals. ... These type fittings of the same material make it possible to install a complete system with no need tools than a sharp knife and a flaring tool.

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**** 80% RADIUS ****
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DIAMETERS UP THROUGH 60"
THICKNESS UP THROUGH 1/2"

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YOUNGSTOWN, OHIO.

NOVEMBER - 1942

EXTRA CARE
Gives
EXTRA WEAR!
VIKING
Service Manual
**"WILL HELP YOU
KEEP 'EM PUMPING!"**

*Your Service
MANUAL for
VIKING ROTARY PUMPS*

You have invested in a superior
product.
With a reasonable amount of
care this pump will give you
long and efficient service.

Take time to read this book
of **EXTRA CARE**. You yourself
will save money. This
booklet contains many tips on how
to keep your pump in top
shape for years of efficient
service.

A good installation is the key
to long service.

VIKING
PUMP COMPANY
CEDAR FALLS, IOWA

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